



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## EARLY ENGLISH HEBRAISTS.

## ROGER BACON AND HIS PREDECESSORS.

IN trying to fathom the state of learning in Western Europe during the Middle Ages, we are not so much struck by the ignorance of the masses, as by the ignorance of the learned. The occasional appearance of scholars of great breadth and depth of erudition makes the low level of the learning possessed by the mediocrities all the more conspicuous. The ordinary student moved within well-defined limits ; his learning was for the most part confined to theological disquisitions, on the lines laid down by the Church, which narrowed more and more as time went on. It was always the moulding and re-moulding of the existing material in customary grooves and after approved methods. Philosophy and knowledge of nature were drawn from sources that had lost all their purity. The works of the ancients, or as much of them as was within reach, had suffered from bad translations, bad transcriptions, mutilations, interpolations, and incorrect interpretations. No new facts were evolved, no new data fixed. No wonder, therefore, that whenever a bolder spirit ventured to break through the conventional humdrum of that which was miscalled study and research, the mediocrities rose as one man against the disturber. It took centuries to lead up to the Renaissance of letters, and when that event actually took place, when scholasticism succumbed at last, and the vigilant observation of nature commenced to supersede the *a priori* speculations of physical science, the change was accompanied by a friction and disturbance that altered the aspect of almost all European affairs.

This self-satisfied slothfulness, this vague horror of every new departure, both in regard to method and to subject-matter, affected the whole field of knowledge. The study of languages, the development of philosophical thought, and the exploration of the phenomena of nature, were all affected in equal measure. The bitterness with which the study of Greek was combated was only a degree less intense than that which opposed the investigation of the Hebrew language and lore. The latter discipline had to suffer, besides, from a certain feeling of uncanniness, a superstitious fear of the Jewish people and their language. "The crowd saw in the Jew a mysterious being, possessed of awe-inspiring mysteries. He was considered a sorcerer. The masses saw in the Hebrew volumes a museum of magic art; the grotesque Hebrew letters seemed to them cabbalistical characters, and the Jew was suspected of occult arts and diabolical intercourse. This vague superstition has not yet entirely died out<sup>1</sup>." It was not before the end of the fifteenth century, that the self-denial and dogged perseverance of Johann Reuchlin secured a firm footing for the study of Hebrew in Christian Europe; and it was long after the knowledge of that language and its literature—together with the study of the other Semitic languages which followed in its train—had made considerable headway on the Continent, that this branch of learning was seriously taken in hand in England.

Reuchlin's fame had reached England already during his lifetime. His learned intercourse with Erasmus; the admiration which he inspired in men like Thomas More and John Fisher; the eagerness with which English students, who, like Richard Croke, visited the continental seats of learning, betook themselves to Reuchlin, in order to become initiated into the newly discovered discipline; and, above all, the life-and-death struggle between Reuchlin and his enemies of Cologne, who desired the public destruction of all Hebrew books, gave an impetus

<sup>1</sup> Anatole Leroy-Beaulieu, *Israel chez les nations*, Paris, 1893, p. 41.

to English scholars to turn their attention to the literature of Hebraism. For a long time Hebrew was taught at the universities of England in a haphazard, empirical way. There was no depth of learning and hardly any breadth. Apart from a few scholars, who achieved great proficiency, Hebrew was only considered as a sort of ornamental accomplishment, sought after by incipient theologians, who were, however, quite satisfied with the merest glimpse through the portals of the temple. It is curious to observe at how low a rate the general public estimated the actual knowledge of those who were engaged in the pursuit of these studies. This feeling is characteristically described in the popular novel *Charles O'Malley*, by Charles Lever. The author makes one of his personages, Frank Webber, express himself, in a letter supposed to have been written by that scapegrace from Trinity College, Dublin, in 1810, in the following terms: "Belson (fortunately he was born in the nineteenth, not in the sixteenth century, or he'd be most likely ornamenting a pile of faggots) ventured upon some stray excursions into the Hebrew verbs—the Professor himself never having transgressed beyond the declensions—and the consequence is, he is in disgrace among the seniors." Allowing for some artistic exaggeration, it describes the situation correctly; underlying it is the fact that a proper, scientific treatment of Hebrew and the kindred tongues is, in this country, a product of quite recent times.

This is all the more remarkable, as it was an Englishman who fully understood the position that Hebrew ought to occupy in the curriculum of learning, and who had himself set to work to master the language, and to urge its importance upon others, fully two centuries before Reuchlin was born. Roger Bacon had already in the thirteenth century advocated the study of Hebrew; but the gigantic intellectual powers, vast erudition, inventive genius, and stolid perseverance, which he brought to bear upon this and many other subjects, were doomed to pass away, almost entirely without fruit; and his name lived in the memories of the

ignorant—a large class in those days, comprising almost everybody—as that of a magician and a cultivator of the black arts.

Before Bacon's time Hebrew was as little known in England as in any portion of what was called in those days *Latinitas*—the countries professing the doctrines of the Roman Catholic Church, and including almost the whole of Europe. No clergyman before Bacon deemed it at all necessary to know Hebrew. The bulk of them had only vague notions as to its existence; the common Latin translation of the Bible, sanctioned by the Church, was considered as sacred, and was the basis of all their theological disquisitions and discussions. Only very few English members of the clergy possessed a smattering of Hebrew; there was perhaps not a single one who had sufficient knowledge to be productive of a new idea or new point of view. Augustine can hardly be called an Englishman; he knew no Hebrew, as little as his superior, the Pope Gregory the Great, to whose total ignorance of Hebrew I shall have to recur.

The Venerable Bede is the first English ecclesiastic in whose works a few stray allusions to Hebrew are met with. Prof. Steinschneider<sup>1</sup> justly says that the *Expositio Nominum*, found among Bede's works, proves, as little as any other dictionary of names, a direct knowledge of Hebrew. Hody, who published in 1705 a work entitled *De Bibliorum Textibus*, in which a rather large fragment of Roger Bacon's *Opus Minus* appeared for the first time, passes in review such English theologians as possessed, in his opinion, a knowledge of Hebrew. Hody was a great patriot in this respect, and he was in every case at pains to make as much as possible of some chance allusion in that direction, found in the works of any English divine. In

<sup>1</sup> In H. Brody's *Zeitschrift für Hebräische Bibliographie*, I, no. 2, p. 53. The same remark applies to explanations of the Hebrew alphabet; e.g. such a one as is found in the commentary to the Lamentations of Jeremiah, in Jerome's works, but which some ascribe to Bede.

the case of Bede, who lived in the eighth century, Hody quotes several passages to show the former to have been a first-rate Hebraist<sup>1</sup>. I agree with Hody that Bede knew some Hebrew, but we are not able to judge as to the extent of his knowledge. In spite of the testimony of Roger Bacon<sup>2</sup>, who alludes to Bede as "literatissimus in grammatica et linguis in originali," I do not think that his knowledge of Hebrew amounted to much. It is true, in his work *De Temporum Ratione* (ch. lxvii), he professes to base his chronological data directly upon the "Hebrew truth." But it would be an error to conclude from this expression, with Hody, that he made use of the Hebrew text of the Bible. Bede himself explains that the "Hebrew truth" means to him nothing more than Jerome's translation. "Just as the Greek scholars," he says, "based their chronological data upon the text of the seventy translators; so we, who drink from the pure source of Hebrew truth, are enabled, through the industry of the holy Jerome, to follow it"<sup>3</sup>. Most passages in his commentaries, if not all, in which some knowledge of the Hebrew text of the Bible transpires, are taken from Jerome. Nevertheless, he must have known some Hebrew, else he would hardly have embodied in his commentaries such notes as those in which allusion is made to the equal sound of the ש and ס, or to the similarity of shape between ד and ר<sup>4</sup>.

<sup>1</sup> P. 406 sqq.

<sup>2</sup> *Opus Minus*, p. 332, Brewer.

<sup>3</sup> Haec de cursu praeteriti seculi ex Hebraica veritate prout potuimus elucubrare curavimus, aequum rati ut sicut Graeci LXX translationum editione utentes de ea sibi suisque temporibus libros condidere, ita et nos qui per beati interpretis Hieronymi industriam puro Hebraicae veritatis fonte potamur, temporum quoque rationem juxta hanc scire queamus. . . . Caeterum cunctis in commune suademus, et sive quis ex Hebraica veritate, quae ad nos per memoratum interpretem pura pervenisse etiam hostibus Judaeis in professo est. . . . Similarly in his Apology *Ad Plegwinum*: Suadebamque illi . . . ut Scripturae sacrae per Christianum nobis interpretem translatae, potius quam Judaeis interpretationibus, vel Chronographorum imperitiae, fidem accommodare disceret.

<sup>4</sup> Thus: Genes X. Filii Saba: Regma et Dadan. Hic Saba per Sin literam scribitur, supra vero per Samech.—Cethim et Dodanim, Dodanim

Hody<sup>1</sup> mentions a remarkable passage from a commentary on the Psalms included among Jerome's works. In Psalm cxxxvi the words "qui fecit luminaria magna" have the following note superadded: "This is said of the stars, which are large, although to us they appear small; in the same way, as if we were to ascend a high mountain and see the people below in the valley, they would appear small to us. For the same star, which is visible 'in Britannia,' appears the same everywhere." Now, the same commentary contains some direct references to the Hebrew text, and if the whole commentary were one compact work, we should here have another Early English Hebraist. But this is by no means the case; the commentary has, as Hody admits, all the appearance of being a compilation; and the words quoted are undoubtedly the interpolation into the text of a marginal note by some English reader.

Alcuin, who was born in 735, seems also to have had some knowledge of Hebrew. Himself a native of Yorkshire, he is believed to have learned Latin, Greek, and Hebrew from Egbert and Albert, bishops of York. Alcuin exercised an enormous influence upon the spread of learning. He either founded or improved most of the schools in France. The regard Charlemagne had for this scholar was unbounded. The court, we are told, was turned into an academy, and Charlemagne and his family and courtiers became Alcuin's pupils, and affected biblical or classical names in addition to their own. Besides theological works, Alcuin left also some writings on philosophy, rhetoric, and philology. He was already an old man, when Charlemagne commissioned him to procure an improved edition of the Bible. The words *Veritas Hebraica*, when used by Alcuin, have the same meaning as with Bede. Alcuin must have known some Hebrew,

Rhodii, melius enim legitur Rodanim sive Rodim, ut septuaginta interpretes transtulerunt, et in libro Hebraeorum nominum etiam noster interpres posuit. Similitudo enim litterarum Daleth et Res hunc apud Hebraeos saepe facit errorem, ut alia legitur pro alia.

<sup>1</sup> P. 409.

although his works show little trace of it. His remark on Genesis xxv. 8, that the word *deficiens* was not in the Hebrew text, but was added by the seventy interpreters, does not prove any direct knowledge of Hebrew. His note on Ecclesiastes ix. 12 would prove a knowledge of Hebrew, provided the observation be originally his. The words *בני אדם* are always translated *filii hominum*; and he observes that, wherever the expression *filii hominum* occurred, the Hebrew text had *filii hominis*, and that it meant the "sons of Adam." It is, he says, usual in Scripture to call the whole human race the sons of Adam<sup>1</sup>.

Alcuin read in Jerome's translation of Ecclesiastes xii. 4 (*וישחו כל בנות השיר*, "and all the daughters of the song shall be brought low") "*et obmutescent omnes filiae carminis.*" He observes, "*obmutescere quoque, sive, ut melius habetur in Hebraeo, surdescere filias carminis.*" It is doubtful whether this observation betrays a knowledge of Hebrew. (The present text of Jerome has *obsurdescent.*) In Alcuin's description of the York library it is said that the relics of ancient Hebrew lore were found there, together with those of Roman and Greek wisdom<sup>2</sup>. It would not have been an impossible thing for Hebrew books to have found their way into that library, but, as Mr. Poole justly remarks<sup>3</sup>, the words used by Alcuin need not be pressed to mean more than the source from which the literature he mentioned was derived.

<sup>1</sup> Notandum est quod per totum librum, ubicunque dicitur *filii hominum*, in Hebraeo habetur *filii hominis*, hoc est, *filii Adam*; et omnis pene Scriptura hoc idiomate plena est, universum genus humanum Adam filios vocans.

<sup>2</sup> *De Pontificibus et Sanctis Ecclesiae Eboracensis*, vv. 1535-1539:—

Illic invenies veterum vestigia Patrum,  
Quidquid habet pro se Latio Romanus in orbe,  
Graecia vel quidquid transmisit clara Latinis:  
Hebraicus vel quod populus bibit imbre superno.

<sup>3</sup> R. L. Poole, *Illustrations of the History of Mediaeval Thought*, London, 1884, p 21.



Hody says<sup>1</sup> that John Bale stated, in the name of William of Malmesbury, that Athelstan, king of England, who flourished in the tenth century, had the Bible translated into Anglo-Saxon, from the pure Hebrew original, with the assistance of some converted Jews, but that no such passage could be found in Malmesbury's works.

Stephen Harding, the famous Cistercian abbot, an Englishman by birth, who was brought up in the monastery of Sherborne, in Dorsetshire, but spent the greater part of his life in France, although himself knowing no Hebrew, yet appreciated its importance for establishing a correct text of the Old Testament. "A MS. edition of the Bible, written under the eye of our abbot himself, was preserved with great reverence at Cîteaux up to the time of the French revolution. Not content with consulting Latin MSS., he even had recourse to the Rabbins, in order to settle the readings of the Old Testament<sup>2</sup>." They explained to him in Latin the Hebrew and Chaldaean of several questionable passages and verses, and he caused all such as could not be found in the original to be erased from the Latin text. The work was completed in 1109<sup>3</sup>.

I feel inclined to believe that in the twelfth century England could boast of a scholar who not only possessed a considerable knowledge of the Hebrew text of the Bible, but who also understood how to apply the same in a bold and independent spirit. As this rests on mere conjecture, I am obliged to treat the matter rather fully, in order to explain the grounds on which I base my surmise. Roger Bacon, in his *Compendium Studii Philosophiae*<sup>4</sup>, discusses the ambiguity of the Latin translation of Genesis ii. 1, 2. The

<sup>1</sup> P. 415. There is no ground to assume, with Hody (p. 403), the existence of an English Eucherius, as distinct from the bishop of Lyons of that name.

<sup>2</sup> J. H. N[ewman], *The Cistercian Saints of England*, London, 1844, p. 129.

<sup>3</sup> Samuel Berger, *Quam notitiam linguae Hebraicae habuerint Christiani mediæ ævi temporibus in Gallia*. Paris, 1893, p. 9 sq.

<sup>4</sup> VIII, p. 480 sqq.

Latin words may be forced to mean: "These are the generations of heaven and earth when they were created, on the day when God made heaven and earth. And all the vegetation of the field had not come forth yet," &c. Or, they may mean: "These are the generations, &c. . . on the day when God made heaven and earth and the vegetation of the field, before it had come forth on the earth, and all the herbs of the field before they had grown." Bacon argues that the latter meaning would be more in accordance with the Latin, but would contradict the narrative of the first chapter of Genesis. He is therefore of opinion, that, in the phrase *omne virgultum agri antequam oriretur in terra*, the words *omne virgultum* are in the nominative; and in the sentence *omnemque herbam regionis priusquam germinaret*, the word *terra* had to be supplied or understood, as the subject to *germinaret*<sup>1</sup>. Bacon adopts this interpretation, not only with a view to solve the contradiction between the two chapters, but also in order to reconcile the Latin translation with the Hebrew text. But he adds, that the sense would be much clearer, if we had the word *herba* in the nominative.

Bacon mentions, thereupon, a certain Andrew (*Andreas quidam*), who wrote *herba* in the nominative, and inserted a negative particle to the verbs *oriretur* and *germinaret*, "quite in accordance with the Hebrew text." Bacon is very angry at this. How dares Andrew, he complains, make his translation, which is not *nostra translatio*, appear

<sup>1</sup> "Istae sunt generationes coeli et terrae quando creatae sunt in die qua fecit Dominus Deus coelum et terram, et omne virgultum agri, antequam oriretur in terra, omnemque herbam regionis priusquam germinaret." . . . Est igitur hic sensus literae: Istae sunt generationes coeli et terrae, etc. . . . et priusquam terra, supple, germinaret omnem herbam regionis. Si vero esset ibi omnis herba in nominativo casu, tunc planior esset litera; sed potest suppleri nominativus casus, sicut terra quae germinaret. . . . Unde non intelligendum, quod sicut Deus fecit coelum et terram in principio, quod fecerit virgulta et herbas, quia hoc falsum est. . . . Sed hic evidentior esset litera si *herba* poneretur in nominativo casu, etc.

as if it were ours, the authorized Latin text? His was not a commentary or any translation; it was nothing but a literal construing of the Hebrew text. The worst of it is, he continues, that many people attributed to Andrew an authority which he did not possess. Nobody, since Bede, had received the sanction of the Church to expound Scripture; and although Andrew was undoubtedly a well-read man, "and probably knew Hebrew," for all that he enjoyed no authority; therefore he cannot be credited, but the Hebrew text must be consulted, to see whether he was right or wrong. If he be right, credence was due to the Hebrew, but not to him; if wrong, he involved us in the danger of taking his text for ours, the authorized text. Nevertheless, Bacon proceeds, Andrew has the great merit of instigating us to consult the Hebrew text, whenever we meet in our translations with some difficulty. Thus, in the passage under consideration, and in many other passages, but few people would have thought of the true meaning, if it had not been for Andrew<sup>1</sup>.

<sup>1</sup> Veruntamen Andreas quidam qui exponit Bibliam ad literam ponit *herbam* in nominativo casu, et literam quamdam, ac si nostra esset, repetit, cum duplici negatione. Sed omnino utitur litera Latina, secundum quod construitur Hebraeum ad literam, ut superius dixi, et non est nostra translatio. Propter quod nescio de quo intromittit se de hac expositione, quia et literam nostram deberet exponere, et non aliam, quae etiam nullius translationis est, sed solius literalis constructionis Hebraei. Haec ideo dixi propter multos qui dant auctoritatem Andreae, cum nec hic nec alibi sit ei danda; eo quod post Bedam non fuit aliquis cui ecclesia dederit auctoritatem in expositione Scripturae, sicut patet in decretis, et constat Andream ibi non esse nominatum. Quamvis igitur fuerat literatus homo, et probabiliter scivit Hebraeum, tamen quia non est dignus auctoritate tanta, non est ei credendum, sed recurrendum est ad Hebraeum de quo loquitur, et si verum dicat, credendum est Hebraeo, sed non ipsi. Si autem falsum et minus bene, sicut hic, involvit nos in quadam litera quae non est nostra, redarguendus sit quia ipse ponit; sed non est, immo est litera quae construit Hebraeum ad literam, ut praedixi. In hoc autem probandus est multum, quod excitat nos ad localia dubia nostrae translationis multotiens, licet non semper, et transmittit nos ad Hebraeum, ut expositiones quaeramus certius in radice. Pauci enim cogitarent de vera expositione istius passus et aliorum multorum, nisi Andream reciperent in hac parte.

Now, who was this Andrew, who had the capacity and at the same time the courage, to amend the Latin translation of the Bible after the original Hebrew text? It is evident that Bacon's orthodoxy had to struggle with a sincere admiration for this expositor of Scripture. It is superfluous to say that he was not the Jew Andrew of whom Bacon declares that he used to help Michael Scot with his translations. The Andrew mentioned here was evidently a Christian theologian of considerable merit. I venture to identify him with the Englishman Andrew, an Augustinian monk, who lived about 1150, and was a pupil of Hugo de Sancto Victore<sup>1</sup>. He is said to have written commentaries on the Pentateuch, Joshua, Judges, Kings, Chronicles, Proverbs, Ecclesiastes, Daniel, Isaiah, Jeremiah, the Minor Prophets, and the Books of the Maccabaeans. His commentaries are reputed to have been of a learned and important character. He is quoted by Nicholas de Lira (1 Sam. x. 8) and others. It is said that a number of his commentaries were formerly extant, or are extant still, in Paris and elsewhere. If the latter be true, it might be worth while, in the interests of the history of letters, to try and obtain a description of such MSS. I believe him to be the same Andrew who is blamed and praised, in one breath, by Roger Bacon; and if my conjecture be correct, we may add this "Magister Andreas, natione Anglus," to the scanty list of Early English Hebraists.

After all that has been said, it must be confessed that

<sup>1</sup> Fabricius, *Bibliotheca Latina Mediae et Infimae Aetatis*, s. v.: "Andreas, natione Anglus, Monachus Augustinianus S. Victoris, Paris. circa annum 1150, Hugonis de S. Victore discipulus. Hujus Commentarios in Esaiam perstringit Richardus de S. Victore libris de Emanuele. Illos commentarios MStos in Regia Bibliotheca Parisiensi extare testatur Oudinus, sicut etiam in aliis Bibliothecis Historicam Magistri Andreae expositionem in Pentateuchum, libros Regum, Paralipomenon, Parabolas et Ecclesiastem, Danielelem, Prophetas Minores, et Maccabaeorum libros. Idem minime nugacem, sed sensu gravem hunc scriptorem esse iudicat. Hisce Pitseus pag. 214 addit quoque in Josue, librum Judicum, Ecclesiastem, et in Jeremiam. Andream hunc refellit Lyranus ad 1 Sam. x. v. 8. Adde Jacobum Quétif, Tom. I, *de Scriptis Dominicanorum*, p. 479."

Early England offers a complete blank in the field of Hebrew literature. On the Continent it was only a little better<sup>1</sup>. A complete revolution in thought, and a considerable increase of general knowledge was required, to prepare the way towards an improvement in that direction. Hebrew had to await its turn; it had to stand aside till the conditions of learning became favourable to its appreciation, and till the right man arose, who was able to impart the necessary impetus to the study of that language.

But in this particular instance it was only the former cause, the unfortunate condition of the time, which delayed the advancement of this branch of letters; for the right man had arisen two centuries before Reuchlin was born. Roger Bacon, a Franciscan friar of the thirteenth century, was not only a theologian of unparalleled erudition and boldness of spirit, but embodied besides the accumulated knowledge of half a dozen scholars—philologists, philosophers, scientists, chemical students, and inventors—of two or three hundred years after his death. Born between 1210 and 1215<sup>2</sup>, he at first devoted himself at Oxford to the study of grammar and logic. Having made himself acquainted with the principles of philosophy, and having entered upon the study of science, he went to Paris to continue his training. He afterwards returned to Oxford. His devotion to learning surpassed that of any of his contemporaries. He sacrificed everything to his thirst for knowledge. He was not satisfied with stocking his mind with everything that could possibly be learned, and with digesting, classifying, and harmonizing all the stores of erudition mastered by him; but he also was indefatigable in his work of advancing learning among his contemporaries.

<sup>1</sup> Cf. my essay on "Johann Reuchlin, the father of the study of Hebrew among Christians," in the *JEWISH QUARTERLY REVIEW*, VIII, p. 445 sqq. (London, 1896).

<sup>2</sup> Vid. the *Opus Majus of Roger Bacon*, edited by Mr. John Henry Bridges, Oxford, 1897, Introduction, p. xxi sqq.; *Fr. Rogeri Bacon Opera quaedam inedita*, edited by J. S. Brewer, London, 1859, Preface.

He instructed young men in languages, mathematics, and other disciplines. He invented and procured such instruments as were indispensable to the pursuit of science; he drew upon himself the sneers and obloquy of his fellow scholars in Oxford, to whom such a mode of proceeding was incomprehensible, and therefore objectionable. He impoverished himself in these pursuits, and in the purchase of rare books, spending two thousand livres on his own education.

Unfortunately, he entered the order of the Franciscans, and thus deprived himself of all freedom of action. His independence of mind roused the suspicions of those who were his superiors in rank, but his inferiors in everything else. His experiments were looked upon as a practice of magic. But he struggled on, in spite of all obstacles, and a fortunate circumstance enabled him at length to make an attempt to put in writing the results of his lifelong studies.

About 1264 the Cardinal Guy Le Gros, or de Foulques, bishop of Sabina, who afterwards became Pope under the name of Clement IV, was sent by Pope Urban IV to England, to intervene in the disputes between Henry III and his barons. His mission failed, and in his efforts to bring the barons to submission he met with insults, which rankled in his breast for ever after. But one great result followed; during his stay in this country, he made the acquaintance of Roger Bacon. Bacon's relations were, with a few exceptions, ardent royalists, who had sacrificed their fortune in their master's cause. Raymond of Laon, a clerk, seems to have drawn the cardinal's attention to Roger Bacon. He was sent to communicate to the latter the prelate's wish to peruse Bacon's writings. Guy de Foulques had meanwhile become Pope, and Bacon sent a gentleman, named Bonecor, to him, to explain that, as a Franciscan, he was not allowed to write a book without a written mandate and a papal dispensation to that effect. The writings, Bacon says, demanded by the cardinal were not

composed; he had written nothing on science before he entered his order, and he was afterwards unable to do so because a strict prohibition had been passed, under penalty of many days' fasting on bread and water, against any work, written either by himself or any one belonging to his house, being communicated to strangers. He could not entrust copyists with the work, because they would only copy his words to serve themselves or others, without any regard to his wishes. The Pope thereupon sent Raymond of Laon a second time to Bacon, commanding him, on his apostolical authority, to transmit to him a fair copy of the work which had been the subject of their correspondence, setting aside all ordinances of his superiors to the contrary; and to make known to him, the Pope, the remedies he considered most advisable for removing the dangers he had formerly pointed out. All this was to be done secretly and without delay.

Armed with this authorization from the Pope, he tried to induce "friends and kinsmen, great and small," to assist him in carrying out the work. He was poor; in fact, he was, as a Franciscan monk, bound to poverty by his vows. The fortune he once possessed had been spent on the acquisition of learning, before he entered the order. His advances were, in most cases, met with opposition and slights. He was looked upon as an importunate beggar, and although a few friends assisted him from their scanty means, the work had to be frequently interrupted for want of money.

Bacon thought he had found in Pope Clement IV a man after his own heart. He imagined that the Pope, when demanding of him to produce his work, was swayed by purely scientific motives. He read his own wishes into the Pope's letter. He laid, I think, too much stress on the Pope's desire of obtaining a fair copy of his work, and made too light of that part of the letter in which he was enjoined to point out the remedies he considered imperative for a better government of the Church. Severe as Bacon

is in his exposure of the corrupted state of the latter, he deals with it only as one of the many subjects he thought he was asked to deal with. But it was the clerico-political aspects of Bacon's views which must have been reported to the Pope, and it was these that induced the latter to summon Bacon to transmit to him a copy of his book in fair writing. Clement IV, from political and hierarchical motives, wanted to obtain a concise and clearly written report on the unsatisfactory manner in which the affairs of the Church were managed; on that which Bacon termed "the quibbles and frauds of the jurists," "the rattle of litigation," &c. He wanted such report, either for the intelligence department of the supreme government of the Church, or for his own private enlightenment on such matters; and the words in his mandate, "*et per tuas declares literas quae tibi videntur adhibenda esse remedia circa illa quae nuper esse tanti discriminis intimasti*," give, perhaps, the clue to the real motive for making the demand. This would explain Clement's anxiety to keep the affair "as secret as possible" (*et hoc quanto secretius poteris facias indilate*). There would have been no call for such secrecy on questions of philosophy and science; but the Pope thought only of questions of Church policy. The Pope had, perhaps, no clearer notions about all those questions to the exploration of which Roger Bacon had devoted his life than the rest of his contemporaries, nor any greater desire to receive information about them; and it may be assumed that Bacon was as much in advance of him as of all others. Brewer eulogizes the Pope because, "in an age of great political disorder, when the storm was still muttering, which had shaken mediaeval society to its basis, he retained his regard for philosophy," and "at all events proved himself so superior to the prejudices of his age as to express some desire to hear what the philosopher was so ready to communicate." I doubt whether these eulogies are deserved. Clement wished to hear from a man who was, as far as concerned England, of the same political



opinions as himself, the complaints he had to make against the management of the Church, and the remedies he suggested. It is doubtful whether he was concerned about anything else that agitated the philosopher's mind. Brewer says that "Clement's lengthy correspondence is filled with the ordinary burthen of official business." Mr. Bridges calls him "the busiest man in Christendom." Such misunderstanding on the part of Clement as to Bacon's aims and objects would account for the latter's numerous complaints, that the Pope, who, he had hoped, would purge the Church from fraud and contentions, had "forgotten to write to his superiors in his excuse; and, as he could not divulge to them 'the secret,' they threw obstacles in his way"; and that the Pope "had overlooked his expenses." But Bacon, only too delighted to be summoned by the Pope, to pen, as he thought, the results of his lifelong researches in the fields of learning, cheerfully proceeded with the execution of the task in spite of all obstacles <sup>1</sup>.

The mutual misunderstanding between Bacon and Clement was the most fortunate blunder that ever assisted the cause of learning. We owe to it the composition of Bacon's trilogy, the *Opus Majus*, the *Opus Minus*, and the *Opus Tertium*. Unfortunately, only a small piece of the *Opus Minus* is now extant; but the *Opus Majus* and the *Opus Tertium* have, happily, been preserved. Bacon deals in these books with theology, grammar, music and dancing, mathematics, the calendar, optics, experimental philosophy, and ethics. The three works were composed and clearly written out for the Pope within fifteen or eighteen months of the arrival of the mandate. They were, as intended by Bacon, written in a popular and easy style. Bacon

<sup>1</sup> Wadding, *Annales Minorum*, IV, p. 265: "Verum est quoddam ejus Opusculum sibi transmitti voluisse Clementem, an legendi profundi hominis arcana cupidine, an subtilioris, vel obscurioris examinandi desiderio, non plane constat ex subjectis litteris Pontificiis, ex Vaticano transcriptis."

considered them as introductory treatises, as mere summaries of the results of his researches. He apologizes for not having his *Scriptum Principale* ready, by reason of various impediments, and because of its prolixity; otherwise, he says, "he would have delivered in distinct and formal treatises a whole system of the grammar of the Latins, of logic, of natural philosophy and metaphysics, of speculative alchemy, of the four speculative, not to add practical, mathematics."

When it is said that in his survey of the whole field of learning he also dealt with grammar, it must not be taken in the narrow sense, as if he occupied himself merely with the elucidation of the principal rules of the accidence and syntax of some particular languages. His encyclopaedic mind soared here also high above the strata of detail, which lay unfolded before him, and of which he took a comprehensive bird's-eye view. He generalized from the details, not of one language, but of groups of dialects, which he tried to compare, and from which he attempted to draw rules applicable to all. Foremost in his mind were two groups of languages, which centred round Latin and Hebrew. Latin was a living language in those days; it was used in greater or lesser purity by every scholar, lawyer, and cleric. It is, therefore, a matter of course that Bacon paid particular attention to it. The motives that induced him to advocate the study of Hebrew were of a complex nature.

First and foremost stand the religious motives. Hebrew was to Bacon, as it was to Johann Reuchlin, the language in which God had revealed himself to his chosen people; and the religious books, divinely revealed, or, at least, divinely inspired, were divulged in that language. Bacon shared the opinion of many great men before and after him, that wisdom, in the widest sense of the word, was delivered to mankind by God himself. The bearers of divine religious truth, singled out in the Bible, were, at the same time, those to whom all things knowable had been revealed. The biblical cosmogony was only a summary; the details,

though not written down, were, as an oral tradition, delivered to later generations by the heroes of the Bible.

God revealed philosophy first to his saints, to whom he also gave the Law. He did so, because philosophy was indispensable to the understanding, the promulgation, the acceptance, and the defence of the Law, and in many other ways also; and it is for this reason that it was delivered, complete in all details, in the Hebrew language<sup>1</sup>.

The whole wisdom of philosophy was given by God, who, after the creation of the world, delivered it to the patriarchs and the prophets. God gave them longevity, in order to afford them the time to comprehend it all . . . They possessed wisdom in its entirety before the infidel sages obtained it, such as the famous poets, or the Sibyls. or the seven wise men, or the philosophers who lived after them. . . All their information about heavenly bodies, about the secrets of nature and the superior sciences, about sects, God, Christianity, the beauties of virtues, and the rectitude of the laws, of eternal reward and punishment, resurrection of the dead, and all other questions, were derived from God's saints. The philosophers did not find them out; God revealed them to his saints . . . Adam, Solomon, and the others testified to the truth of the faith, not only in holy writ, but also in books of philosophy, long before there were any philosophers properly so-called<sup>2</sup>.

<sup>1</sup> *Opus Tertium*, X, p. 32: Revelavit igitur Deus primo philosophiam sanctis suis, quibus et legem dedit; nam philosophia utilis est legi Dei, ad intellectum, ad promulgationem, ad probationem, ad defensionem, et multis aliis modis, ut patet per opera quae scribo. Et ideo primo tradita est principaliter et complete in lingua Hebraea.

<sup>2</sup> *Opus Tertium*, XXIV, p. 79: . . . tota philosophia data est a Deo, quia sancti patriarchae et prophetae a principio mundi eam receperunt a Deo; quibus Deus dedit longitudinem vitae. . . Nam ut probem quod sancti primo habuerunt philosophiam et sapientiam totam ante quam philosophi infideles, revolve totum tempus a principio mundi, discurrens per omnes aetates et saecula, ut inveniam quando primo fuerunt singuli, qui titulum sapientiae habuerunt, sive sint poetae praeclari, sive Sybillae, sive septem sapientes, sive philosophi qui post illos septem venerunt . . . quod de coelestibus mira dicunt, et de secretis naturae, et scientiarum magnalium, et de sectis, et de Deo, et de secta Christi, et de virtutum pulchritudine et legum honestate, et de vita aeterna gloriosa et poenali, et de resurrectione mortuorum, et de omnibus. Nam philosophi habuerunt haec omnia a sanctis Dei; unde philosophi non invenerunt hoc primo, nec homo, sed Deus revelavit suis sanctis. Nam quis homo per se posset scire coelestia, et indicia rerum per ea, et alia infinita quae scribunt philosophi? Certe nec Salomon, nec Adam maximus, nec aliquis; sed

Philosophy was developed by Noah and his sons, particularly by Shem. All philosophers and great poets lived after them and after Abraham. For Aristotle and all other authorities agree that the first philosophizing people were the Chaldaeans and Egyptians. But although Noah and his sons taught the Chaldaeans, before Abraham taught the Egyptians, yet was methodical study not introduced at once, but gradually developed by practice<sup>1</sup>.

Following in the footsteps of his predecessors, including the authors of some writings erroneously attributed to Aristotle, Bacon proceeds to trace the chain of transmission of philosophy. He mixes together biblical and mythological personages, dealing with the latter after the method first introduced by Euhemerus of Crete.

Zoroaster invented the magic arts ; he was the son of Ham, the son of Noah. Io, who was afterwards called Isis, taught the Egyptians to write ; for, although they had been taught everything by Abraham, they had no literature. Isis was the daughter of Inachus, the first king of the Argives, who was a contemporary of Jacob and Esau. According to others, she introduced letters from Ethiopia. Minerva, the inventress of many things, lived about the same time. Under Phoroneus, Inachus's son, moral philosophy was first introduced among the heathens. Prometheus was the first great teacher of philosophy, and his brother Atlas the first great astrologer. But he was preceded by the great astronomers, the sons of Noah, and Abraham, and whatever he knew he had learned when he was living in slavery among the children of Israel. His grandson, Mercury, became the great teacher of mankind. Apollo's son, Esculapius, was the first teacher of medicine among the heathens. Apollo himself, a great expert in medicine, cured by spells and incantations, but the

Deus ipse revelavit legem suam sanctis, et philosophiam propter intellectum legis, et extensionem, et probationem, et promulgationem, et defensionem ; et hi sancti scripserunt libros philosophiae omnes. Et non solum in sacra Scriptura fecerunt mentionem de veritate fidei, sed in suis libris philosophicis, et praenuntiaverunt omnia antequam philosophi fuerunt. Cf. *ibid.* VIII, p. 24.

<sup>1</sup> *Opus Majus*, II, 9 ; vol. I, p. 46, Bridges : Noe et filii ejus multiplicaverunt philosophiam, et praecipue Sem praevaluit in hac parte. . . Aristoteles et omnes consentiunt in hoc, quod primi philosophantes fuerunt Chaldaei et Aegyptii. . . Quia licet Noe et filii ejus docuerunt Chaldaeos antequam Abraham docuit Aegyptios, tamen non fuit studium more scholastico ita cito institutum, sed paulatim crevit ordo ejus et exercitium.

son followed the true method of experience. But both had been preceded by Adam and Enoch. Of all branches of knowledge medicine is the most necessary ; there can, therefore, be no doubt but that it was invented by the sons of Adam and Noah, who were so wise, and to whom long life was vouchsafed for the purpose of completing the study of wisdom <sup>1</sup>.

Aristotle would never have been able to achieve such great results without the protection and pecuniary aid of kings, especially of Alexander the Great. King Solomon himself possessed great wealth, and was, therefore, able to complete his philosophical works in Hebrew. The sons of Adam and Noah, and their offspring, were able to master all knowledge by the power of wealth and longevity <sup>2</sup>.

Philosophy was delivered on four distinct occasions. It was delivered for the first time in Hebrew, complete in all its details, by Adam and Noah ; the second time by Solomon, but Aristotle and Avicenna, who mark the two other epochs in the history of philosophy, were only able to deliver it incompletely, because they were heathens <sup>3</sup>.

The origin of all wisdom and knowledge must thus, in Bacon's estimation, be sought in the Hebrew writings, as divulged by Hebrew saints and sages, and the Bible is the ever-flowing mainspring from which all human enlightenment issued. But it was known only from translations ; and Bacon's distrust of translations, though not stronger than that of Reuchlin after him, was yet accentuated by the former in much more vigorous terms. He objected to translations for two reasons ; in the first place, because of the impossibility of reproducing the exact meaning of the original, and, secondly, because of the inferior quality of

<sup>1</sup> Ibid., p. 46 sqq.

<sup>2</sup> *Opus Tertium*, VIII, p. 24 : Aristoteles quidem, auctoritate et auxiliis regum, et maxime Alexandri, fecit in Graeco quae voluit, et multis millibus hominum usus est in experientia scientiarum, et expensis copiosis, sicut historiae narrant. Salomon vero, rex ditissimus, similiter complevit philosophiam in Hebraeo ; et filii Adae et Noae, et filii ejus, et Abraham, et illa familia, tum divitiarum potentia, tum longitudine vitae, omnia compleverunt.

<sup>3</sup> Ibid. : Sic igitur quater fuit philosophia sufficienter tradita, sed bis omnino completa ; scilicet, primo per filios Adae et Noae, et secundo per Salomonem. Caeteri duo juxta sua tempora tradiderunt sufficienter, sed non omnino compleverunt, quia fuerunt infideles. X, p. 32.

the existing translations, and the incompetency of the translators. Quoting Jerome, he says that no language can be faithfully rendered into another. That which sounded well in one tongue became absurd and ridiculous when expressed in another. Homer became ridiculous when translated into Latin, and that most eloquent poet could hardly be said to speak at all. Anybody could make the experiment for himself, let him only try and translate a scientific work into his mother tongue. He could not simply transfer the terms, say of logic, by equivalent terms in his own language ; he must invent new expressions, and he would only be understood by himself. This is not only the case when dealing with two totally different languages, but also when handling two different dialects of one, as, for instance, Picardian, Gallic, Provençal, and all the other idioms, from the confines of Apulia to the borders of Spain ; their common mother being Latin. Another drawback was that, in works on theology and philology, many terms were taken over verbally, which could only be written, pronounced, and understood by those who were acquainted with the language from which they were derived. The cause of this lay in the fact that the Latin vocabulary could not supply equivalent terms, because no original work on theology and philosophy had been composed in Latin. All texts were originally either Hebrew, Greek, or Arabic. The entire groundwork of wisdom was composed in languages other than Latin, and "waters drawn from the fountains were sweeter than those taken from turbid rivulets, and wine was purer and more wholesome when kept in the original cask, than when poured from vessel to vessel." If, therefore, the Latins wished to drink the pure and wholesome liquor from the fountain of wisdom, they would be obliged to turn their attention to the Hebrew, Greek, and Arabic languages. It was impossible to recognize the proper form and beauty of wisdom in all its dignity, except in the languages in which it was originally laid down. Only those who had tasted of

the well of wisdom in its primary fullness and purity, could know the delight it afforded; all others were like those stricken with paralysis, who could not judge of the sweetness of food; or like those born deaf, who were unable to enjoy harmonies of sound<sup>1</sup>.

There are striking points of resemblance between this first explorer and the more successful pioneer of Hebrew lore in Christian Europe. Both Bacon and Reuchlin had an unbounded veneration for Jerome, whom they took as

<sup>1</sup> *Opus Tertium*, XXV, p. 90: Nam quod bene resonat in una, absurdum est in alia et ridiculosum. Unde Hieronymus dicit libro memorato, cum Homerum transfers in Latinum videbis ridiculosum et poetam eloquentissimum vix loquentem. Et hoc potest quilibet probare, si scientiam quam novit velit in linguam maternam convertere. Certe logicus non poterit exprimere suam logicam si monstrasset per vocabula linguae maternae; sed oporteret ipsum nova fingere, et ideo non intelligeretur nisi a se ipso. Et sic de aliis scientiis. Et hoc videmus in idiomatibus diversis ejusdem linguae; nam idioma est proprietas alicujus linguae distincta ab alia; ut Picardium, et Gallicum, et Provinciale, et omnia idiomata a finibus Apuliae usque ad fines Hispaniae. Nam lingua Latina est in his omnibus una et eadem, secundum substantiam, sed variata secundum idiomata diversa. . . . Quarta causa potest esse quod vocabula infinita ponuntur in textibus theologiae et philosophiae de alienis linguis, quae non possunt scribi, nec proferri, nec intelligi, nisi per eos qui linguas sciunt. Et necesse fuit hoc fieri propter hoc, quod scientiae fuerunt compositae in lingua propria, et translatore non invenerunt in lingua Latina vocabula sufficientia.—*Ibid.*, VIII, p. 24: Et non fuit (philosophia) ab aliis tradita, nec unquam apud Latinos facta, nec complete translata, sed imperfecte, et pessime per partes peiores ab aliis linguis transfusa.—*Compendium Studii Philosophiae*, VIII, p. 465 sqq., Brewer: Latini nullum textum composuerunt, scilicet neque theologiae neque philosophiae. Omnes textus facti sunt primo in Hebraeo bis, tertio in Graeco, quarto in Arabico. . . . Cum igitur totus textus sapientiae sit factus in aliis linguis, et dulcius ex ipso fonte bibuntur aquae quam in rivulis turbidis, atque vinum purius est et sanius, atque virtuosius dum in primitivo vase tenetur, quam quum de vase in vas transfunditur, manifestum est necessarium fore Latinis, ut si volunt puro, et sano, et efficaci sapientiae liquore potari, quod in fonte Hebraici sermonis, et Graeci, et Arabici, tanquam in primitivis vasis, discant sapientiam exhaurire. Nunquam enim poterunt dignitatem sapientiae in propria forma et figura contempleri, nec ut est in decore suo, nisi in illis linguis eam aspiciant, in quibus primitus fuerat constituta. O, quantum placet gustus sapientiae his qui sic sunt fontali et primaria plenitudine delibuti!

a pattern, after whom to shape their course in life. Both believed that all wisdom had been revealed by God to the Israelites, and was transmitted by them to the rest of mankind. Thus Reuchlin expressed his belief that the science of medicine was taught by God to the Jews, from whom it passed later to the Greeks and the Romans, and, finally, to the Germans. A deeply felt aversion to translations was common to both. Reuchlin, when quite a youth, composed a Latin dictionary under the title of *Vocabularius Breviloquus*, in which he was frequently under the necessity of quoting Hebrew words without understanding them, and he repeatedly expresses his disgust at this. The comparison of translations to "wine poured from cask to cask" was made in almost the same terms by Bacon and by Reuchlin<sup>1</sup>.

But in the case of Bacon the horror of translations was intensified by the condition of the existing versions, which he considered to be of the worst possible kind. His dissatisfaction knew no bounds, and he emptied the vials of his wrath upon translations and translators alike. He indiscriminately condemns all translations from Greek authors; and, in regard to versions of the Bible, he does not scruple to point out the errors of some of his most venerated divines. Like others before him, he demands of every translator a complete mastery of the language from which he translates, of the language into which he translates, and of the subject on which the work under consideration treats<sup>2</sup>. "Give us

Sed qui hoc non sunt experti non sentiunt delectationem sapientiae; sicut nec paralyticus potest cibi dulcedinem judicare. Et quia affectus eorum est solutus paralyti, et intellectus eorum est in hac parte sicut surdus a nativitate ad delectationem harmoniae, ideo non dolent de tanto damno sapientiae, cum tamen sit proculdubio infinitum.—This is followed by complaints about translations and translators similar to those in the *Opus Tertium*. The subject is more fully treated in the third book of the *Opus Majus*, vol. I, p. 66 sqq., Bridges.

<sup>1</sup> Cf. about Reuchlin, my essay: "Johann Reuchlin," &c., vid. supra, p. 45, n. i.

<sup>2</sup> Jehudah ben Salomo Alcharizi, who wrote about the time when Roger Bacon was born, expresses this Canon about translators, tersely



a translator of that kind, and we shall praise him." But there are none such. There were only two whose versions were of real value: Boëtius, who knew the languages, and Robert de Grosseteste, whose knowledge of languages was, indeed, slight, but who was a complete master of the subjects. Take, however, such translators as Gerard of Cremona, and Michael Scot, and Alfred the Fleming, and Hermann the German. They translated a number of books on all kinds of scientific subjects, but the amount of mistakes they made was incredible. They neither knew the languages nor the subjects. "The Bishop Hermann the German is still alive, and I used to know him well. When I asked him about some Arabic works on logic, he told me roundly that he knew no logic. Not knowing logic, he could not properly know any other science." But he did not even have a sufficient knowledge of Arabic, and, when in Spain, he employed some Saracens, and they were the real authors of his translations. The same must be said of Michael Scot; he neither knew languages nor science, and his translations were for the most part the work of a certain Jew, Andrew. The others were of the same calibre, but William the Fleming was the worst of all. Besides, Bacon continues, Greeks, Arabs, and Jews did not give the Christians, who applied to them, the genuine works, but only mutilated and corrupted copies, especially when they perceived that they had ignorant people to deal with.

The consequence was that the few translations that had been made of the many Hebrew, Greek, and Arabic works that existed, were unintelligible. The student lost all that was beautiful and useful, and philosophy was doomed. It was a waste of time to study, from such versions, Aristotle's

and elegantly, in the introduction to his translation of Maimonides' commentary to the *Mishnah*, *Seder Zeraim*, in the following terms:—

כי אין לארם להעתיק ספר ער אשר ידע שלשה דברים  
 סוד הלשון אשר יעתיק מגבוליה  
 וסוד הלשון אשר יעתיק אליה  
 וסוד החכמה אשר הוא מפרש מליה

works, which are the basis of all wisdom. It would have been much better if Aristotle had never been translated; the more you read, the less you understood. What was the consequence? The scholars turned away from such translations, and sought a remedy elsewhere. If he could have his way he would have all such translations burned.

It was the same with the text of the scriptures. Jerome had pointed out numerous errors in the Septuagint, and in the translations of Theodotion and Aquila. He had a perfect knowledge both of the languages and of theology; nevertheless, his text is not always reliable. There was a general outcry against him; all stood up for the authority of the Septuagint as for very life. Jerome was called a falsifier and corruptor of the scriptures, because he attempted to introduce new translations. He, therefore, adapted himself to the previous versions, sometimes to Aquila's, sometimes to that of Symmachus, but most frequently to the Septuagint, although he knew that these translations did not accord with the Hebrew original. Besides, Jerome himself admits that he erred frequently, on account of undue haste.

Again, ignorance of languages occasioned the existing translations to become hopelessly corrupt. The theologians understood neither the text, nor the commentaries, in which Greek, Hebrew, and Arabic were hopelessly mixed up. The Vulgate was overrun with errors, and, worst of all, in the Parisian copy. Everybody interfered with the text; there were as many correctors, or, rather, corruptors, as readers. As soon as somebody did not understand the text, he altered it; a thing which nobody would dare to do with poetry or works on science. But as to the text of the Bible, everybody altered it as the fancy struck him<sup>1</sup>.

Besides the corrupted condition of all translations, so

<sup>1</sup> Bacon's estimate of translations, as sketched here, is laid down: *Opus Majus*, III, vol. I, pp. 67 sqq., 77 sqq.; IV, p. 221, Bridges. *Opus Minus*, pp. 325, 330-349. *Opus Tertium*, X, p. 33; XV, p. 55; XXIII, pp. 75-78; XXV, pp. 89-95. *Compendium Studii Philosophiae*, VIII, p. 465 sqq.

bitterly complained of, there was a further stimulus for Bacon to urge the necessity of obtaining an authentic text of the Bible and of other ancient works, and of studying languages and the arcana of nature, in his hopes of achieving by these means the conversion of infidels and schismatics. It is superfluous to say that he religiously believed in the tenets of his faith becoming ultimately the only and universally acknowledged religious persuasion all over the world. The infidels had therefore to be either converted or exterminated. The latter expedient had to be applied to those who were foredoomed to perdition ("praesciti ad infernum"). But it could be effected on a much larger scale, and with less danger to the faithful, by scientific resources, than by the crude laical methods of warfare, which were, at the best, uncertain as to the results. Alexander the Great achieved in his wars greater results, and with less loss to himself, by following Aristotle's counsels than by his numerous and well-equipped armies. It was by the light of wisdom that the conversion of the infidels would be brought about; and the obstinate would be better removed from the confines of the Church by the instrumentality of wisdom than by the effusion of Christian blood<sup>1</sup>.

<sup>1</sup> *Opus Majus*, I, vol. I, p. 1, Bridges: Nam per lumen sapientiae ordinatur Ecclesia Dei, Respublica fidelium disponitur, infidelium conversio procuratur; et illi, qui in malitia obstinati sunt, valent per virtutem sapientiae reprimi quam per effusionem sanguinis Christiani.—Cf. *ibid.*, p. 220 sqq.—*Opus Minus*, p. 320: . . . et tempus ponitur quo omnino destruetur secta Saracenorum.—*Opus Tertium*, V, p. 20: Nam utilitas philosophiae est respectu theologiae, et ecclesiae, et reipublicae, et conversionis infidelium, et reprobationis eorum, qui converti non possunt.—*Ibid.*, XXVI, p. 95: Et ad conversionem infidelium et schismaticorum manifesta est utilitas linguarum. Sed de reprobatione eorum qui converti non possunt, non est evidens. Nam hoc est unum de secretis secretorum, et quod apud vulgum reputaretur magicum, vel falsum, etc.—*Compendium Studii Philosophiae*, I, p. 395: Quarto, ut omnes nationes infidelium praedestinatae ad vitam aeternam convertantur magna efficacia et gloria fidei Christianae. Quinto, ut qui converti non possunt, praesciti ad infernum, reprimantur longe magis per vias et opera sapientiae, quam per bella civilia laicorum. Quod enim laicali ruditate turgescit non habet

As an instance of a possible wholesale destruction of incorrigible infidels by the resources of civilization, Bacon mentions the use of gunpowder. That explosive, although invented before his time, was known to him only as "a children's toy of the size of the thumb of a man, which, when exploding, produces a noise and coruscation, exceeding those of a thunderclap." It appears that Bacon, although recognizing the detonation and atmospheric disturbance caused by gunpowder, yet had no idea of the destructive application that might be made of its propelling properties. He thought that it was by some such explosive, flashing forth suddenly from broken pitchers by the application of torches, that Gideon was able to destroy, with only three hundred men, the innumerable army of the Midianites. Bacon, if he had known the degree of development the study of explosives would reach, would have pressed all dynamitards into the service of the Church, for he demands that the Church should utilize such appliances against its enemies; otherwise the antichrist would not be slow in making use of them for his own purposes. This might easily be prevented, if only princes and prelates would study the secrets of nature and art<sup>1</sup>.

effectum nisi fortuito, sicut videmus in omnibus bellis eorum ultra mare et citra; sed opera sapientiae certa lege vallantur, et in finem debitum efficaciter diriguntur; sicut antiqui principes per sapientes philosophos operati sunt. Nam legimus quod Alexander Magnus consilio et sapientia Aristotelis destruxit magis quam debellavit decies centena millia hominum. . . . Cf. *Epistolam de Secretis Operibus, etc.*, V, p. 535, Brewer.—*English Historical Review*, 1897, Fragment edited by Dr. Gasquet, pp. 499, 501.

<sup>1</sup> *Opus Majus*, VI, vol. II, p. 218, Bridges: Quaedam (opera) tantum terrorem visui incutiunt, quod coruscationes nubium longe minus et sine comparatione perturbant; quibus operibus Gideon in castris Midianitarum consimilia aestimatur fuisse operatus. Et experimentum hujus rei capimus ex hoc ludicro puerili, quod fit in multis mundi partibus, scilicet ut instrumento facto ad quantitatem pollicis humani, ex violentia illius salis qui sal petrae vocatur tam horribilis sonus nascitur in ruptura tam modicae rei, scilicet modici pergameni, quod fortis tonitruum sentiatur excedere rugitum, et coruscationem maximam sui luminis jubar excedit.—*Ibid.*, p. 222: Et hoc deberet ecclesia considerare contra infideles et rebelles, ut parcatur sanguini Christiano, et maxime propter futura

But another motive besides the conversion of infidels actuated him in his desire to learn Hebrew; a powerful motive, which affected the minds of Bacon and, after him, of Reuchlin, in equal measure. Both were swayed by the spirit of mysticism. But mysticism had in Reuchlin's time already been raised to a science, and served as a link to connect an effete scholasticism with modern philosophy and experimental science. In Roger Bacon's time it was still unsystematically mixed up with religion, philosophy, magic, knowledge of nature, according to the frame of mind of the philosopher who speculated on such matters. The devout minds, both of Reuchlin and of Bacon, believed in a spiritual and occult meaning of every word, of every letter, of the Hebrew Bible; and this acted on both as a stimulus, to explore the unknown regions of Hebrew lore, and to establish the original, divinely inspired text of the Bible. Words can work wonders, above all, such words as were delivered directly by God. Reuchlin laid down the results of such belief chiefly in the books *De Verbo Mirifico* and *De Arte Cabbalistica*. Bacon, in accordance with the encyclopaedic construction of his vast intellect, tried to go to the root of such conceptions, from which he expected the triumph of his Church.

He points out the difference between the use and the abuse of the power of words; they were used either in a holy and philosophical or in an unholy and magical manner. "For the same knife cuts bread and wounds a man. The application of the power of words was either

pericula in temporibus Antichristi, quibuscum Dei gratia facile esset obviare, si praelati et principes studium promoverent et secreta naturae et artis indagarent.—*Epistola de Secretis Operibus*, etc., VI, p. 536: Nam soni velut tonitrua possunt fieri et coruscationes in aere, immo majori horrore quam illa quae fiunt per naturam. Nam modica materia adaptata, scilicet ad quantitatem unius pollicis, sonum facit horribilem et coruscationem ostendit vehementem. Et hoc fit multis modis; quibus omnis civitas et exercitus destruitur, ad modum artificii Gideonis, qui lagunculis fractis, et lampadibus, igne exsiliante cum fragore inaeestimabili, infinitum Midianitarum destruxit exercitum cum trecentis hominibus.

the exercise of a natural force, or it was nothing, or else the work of the devil<sup>1</sup>."

Since the creation of the world almost all miracles were performed by words. The word is the principal product of the rational soul, and its greatest delight. Words are possessed of great power when they are the result of profound thought, great longing, fixed intention, and strong confidence. By the co-operation of these four functions the rational soul is excited to give its impress and virtue to its own body, to things external, to its actions, and, above all, to the words which are produced from within, and receive therefore more of the virtue of the soul. Nature, says Avicenna, obeys the cogitations of the soul, as is shown by the hen, on whose leg a spur grew, by its feeling of triumph at the victory won by the cock. If thus nature obeys the cogitations of the sensitive soul, how much more will it obey those of the intellectual soul of those who are only one degree below the angels? Man's outward appearance and voice varies, as the greater or lesser sanctity of the soul. A considerable increase in the power of either the good or the bad soul modifies the voice, and the air affected by the latter. The air thus formulated by the voice, and having received a strong impetus from the rational soul, can be changed accordingly, and change, in its turn, the things it contains, be they agents or patients. It is the same with the body. Body and soul forming a unit, the body naturally obeys the cogitations of the soul; they modify its outer appearance. It again affects, and is affected by, the air, which was itself affected by the voice. A further change is due to stellar influences. Whenever the voice is produced, the change wrought by it in the air is complicated by the effects of the constellations, and this again acts upon the things contained in the air. Everything depends, therefore, upon four influences: the voice formulating the air, the good or evil condition of the rational soul, the body, and the stars. When cogitating, intending, wishing, and strongly hoping for any change, a favourable condition of the heavenly bodies must be chosen in conjunction with the other influences; in the same way as a skilful physician selects suitable stellar conditions, when desirous of working a cure. It was, as Avicenna says, in this way that the prophets and sages of old changed the matter of the world (*materiam mundi*), and produced

<sup>1</sup> *Opus Tertium*, XXVI, p. 95: Et per cultellum possum scindere panem et hominem vulnerare. Sic similiter per verba potest sapiens sapienter operari, et magicus magice. Sed alia ratio est in operatione hinc et inde. Nam unus facit per potestatem naturalem; alius aut nihil facit, aut diabolus auctor est operis.

rain, or drought, or other atmospheric changes, by the power of words. In this consists the art of alluring or repelling men and beasts, snakes and dragons. This is the nature of every spell, and not the mere utterance of a word; the latter will have no effect, unless the devil interferes. The other forces combined with the five conditions of the soul—strong thought, vehement wish, firm will, and either goodness or badness—are indispensable. The origin of songs, incantations, and various modes of writing must be traced to these influences<sup>1</sup>.

It is easy to perceive how this belief in the mystical power of words, and the conviction that every word of the Bible had a spiritual meaning apart from the literal sense, affected each other reciprocally. They raised the desire of establishing the correct text of the Bible to a religious duty, and imperatively demanded the study of the language

<sup>1</sup> *Opus Tertium*, XXVI, p. 96: . . . omnia miracula facta a principio mundi fere facta sunt per verba. Et opus animae rationalis praecipuum est verbum, et in quo maxime delectatur. Et ideo cum verba proferuntur profunda cogitatione et magno desiderio, et recta intentione, et cum forti confidentia, habent magnam virtutem. Nam cum haec quatuor contingunt excitatur substantia animae rationalis fortius ad faciendum speciem et virtutem a se in corpus suum et res extra, et in opera sua, et maxime in verba, quae ab intrinsecus formantur; et ideo plus de virtute animae recipiunt. Nam secundum quod Avicenna docet, octavo de Animalibus, natura obedit cogitationibus animae; et docet in exemplo de gallina cui ex gloria victoriae galli crevit cornu in crure. Ex hoc igitur cognovimus, quod natura obedit cogitationibus animae sensitivae, ut ait; sed longe magis obedit cogitationibus animae intellectivae, quae est dignior creaturarum praeter angelos. Et secundum quod anima est sancta vel peccatrix variatur generatio speciei et vocis; et secundum quod anima est benevola vel malevola; et sic virtus animae bonae vel malae fortiter multiplicata, imprimitur et incorporatur fortiter in voce, et in aëre deferente vocem. Et hic aër sic figuratus voce, et habens fortem speciem animae rationalis, potest alterari per hanc virtutem. et alterare res in eo contentas, in varios effectus et passiones varias. Similiter corpus fortiorem speciem facit ex his cogitationibus et desideriis animae, et intentione et confidentia. Nam quia unum per essentiam fit ex corpore et anima, natura corpus obedit cogitationibus animae, et facit suam speciem fortiorem, quae etiam recipitur in aëre formato per vocem; et sic aër alteratur per hanc speciem corporis sicut per speciem animae, et alterat res in eo contentas; et secundum quod est malae vel bonae complexionis sic accedit passio in aëre et in rebus diversa . . . et opera quae fiunt hic inferius variantur secundum diversitatem coelestium constellationum. . . . Et est ista quadruplici specie et virtute, scilicet vocis figurantis aërem,

in which it was originally conceived. Bacon repeatedly points to the importance of understanding the spiritual meaning of the text. Now "the text" is to Bacon what it was to all his predecessors and contemporaries, namely, the Latin translation. But although it would be possible to study the literal meaning from "the text," the latter could be of very little avail for the knowledge of the spiritual sense. "Suppose even 'the text' to be correct to the letter, innumerable false and doubtful notions still remain on account of the ignorance of the languages from which the translations had been made." Therefore Bacon comes to the conclusion that there was only one remedy, the study of the original languages. "But our theologians do not even know the Hebrew alphabet<sup>1</sup>."

et animae rationalis bonae vel malae, et corporis, et coelestis constellationis, potest ineffabilis fieri variatio et mirabilis in aëre, et in rebus contentis; et hoc si eligatur tempus bonae constellationis vel malae, secundum qualitatem alterationis quae cogitatur, et intenditur, et desideratur, et fortiter operatur. Nam tunc fiet alteratio certa secundum conditionem constellationis cum adiutorio aliarum virtutum operantium, sicut medicus peritus qui juxta desiderium purgandi choleram, quae est causa morbi, quaerit debitam constellationem in aliqua hora. . . . Et per hanc viam verborum aestimavit Avicenna in sexto Naturalium, quod prophetae et sapientes antiqui alterabant materiam mundi, ad pluvias et siccitates et alias alterationes aëris. Et aestimaverunt philosophi quod sic contingit allicere homines et animalia bruta et serpentes, et dracones de cavernis, et fugare secundum libitum hominis, et uti iis. Et hic oritur omne genus fascinationis; non quod fascinatio dicatur per solum verbum casualiter prolatum . . . et nihil operetur, nec fit aliquid, nisi diabolus propter peccata hominum operetur latenter. Sed si virtutes quatuor praedictae concurrant cum quinque conditionibus animae, scilicet forti cogitatione, desiderio vehementi, intentione certa et firma spe, bonitate animae vel malitia, et cum complexione corporis mala vel bona, tunc erit alteratio, quocunque modo vocetur, seu fascinatio sive aliud. Et hic oritur tota consideratio carminum et incantationum et characturum, etc.—Cf. *Opus Majus*, IV, vol. I, p. 395 sqq., Bridges.

<sup>1</sup> *Opus Minus*, p. 349: Nam si litera est falsa pro majori parte et dubia in aliis, quae dubitatio cadit in virum sapientem, ut probatum est, tunc oportet quod sensus literalis sit consimilis, et per consequens sensus spiritualis. Deinde posito quod litera esset totaliter correcta, cum certa probatione, adhuc loquitur falsa et dubia quasi infinita. Et una rei hujus radix est ignorantia linguarum de quibus textus est translatus. . . .



But all such ancillary motives, as the improvement of Church management, the interests of theology and science, the spread of Christianity, the annihilation of incurable infidels, the understanding of the spiritual meaning of the Scriptures, were not the only levers that moved Bacon's mind towards the study of languages. He was, besides, powerfully affected by another fundamental incentive, of which, however, he was perhaps less conscious than of any of the other, purely subservient, motives. Bacon possessed the true philological instinct; he had a keen perception of the connexion subsisting between the various dialects belonging to groups of languages. At a time when that study was as yet entirely unknown in Europe, Bacon speculated upon the kinship of languages, and we need not be surprised that he extended the idea beyond its proper limits. He far surpassed Reuchlin in this respect. He meditated on the origin of all languages, on the primitive language, on the language spoken by Adam, and the way in which he found names for things. He ponders on what would happen if children were to grow up in a desert; whether they would have intercourse by speech, and how they would give expression to their mutual feelings when meeting under such circumstances. He considered such inquiries to form a part of grammar, and of no other discipline, and thinks them indispensable alike to theology, philosophy, and all other branches of wisdom<sup>1</sup>.

Unde Hieronymus semper inducit Hebraeum et Graecum fere ad omne verbum, quod exponit, et probat expositionem suam per linguas. . . . Sed nos theologi ignoramus ipsa alphabeta, quapropter oportet quod ignoremus Dei textum et expositiones sanctorum . . . nullus autem potest hoc intelligere, nisi sciat alphabetum Hebraeum et orthographiam eorum.—Cf. *ibid.*, p. 357.

<sup>1</sup> *Opus Tertium*, XXVII, p. 101: . . . et multa intermiscui difficilia, ut de lingua prima Adae et qualiter dedit nomina rebus; et an pueri in deserto nutriti aliqua lingua per se uterentur, et si obviarent sibi invicem quomodo mutuos indicarent affectus. . . . Unde reputo hanc partem grammaticae summae necessariam theologiae, et philosophiae, et toti sapientiae. Et probo quod sit pars grammaticae et non alterius sapientiae.

The conclusion Bacon arrives at is that "there was a universal grammar, that the grammar of all languages was essentially the same, and that the differences were of a purely accidental character<sup>1</sup>." He declares that Arabic, Chaldaean, and Hebrew were only dialects of the same language, in the same way as Picardian, French, Normandian, Burgundian, Parisian, Provençal, were only dialects of the common French tongue, and that the dialects spoken in the countries between Apulia and Spain all belonged to the common Latin stock. It was necessary that the Latins should possess a short and concise treatise on other languages, especially on Greek, Hebrew, and Arabic, to serve as an introductory manual to the grammar of their own (Latin) language; not only because all knowledge possessed by the Latins was borrowed from books written in those idioms, but because the Latin language itself was based upon those tongues<sup>2</sup>.

The want of books, which was so serious a drawback to Reuchlin, was a much greater impediment in the case of Bacon. Both the one and the other sought far and wide to unearth the works they wanted for their investigations. Reuchlin particularly deplored the impossibility of obtaining Cabbalistical and Talmudical works. He even suggested

<sup>1</sup> Greek Grammar, quoted by Emile Charles, *Roger Bacon, Sa vie et ses ouvrages*, p. 263.

<sup>2</sup> *Opus Tertium*, XXV, p. 88: Transeo igitur ad partem tertiam in Opere Majori et illa est de linguis, seu de utilitate grammaticae, secundum linguas praecipue tres, scilicet, Hebraeum, Graecum, et Latinam. De Arabica tango locis suis. . . In prima ostendo quod necesse est Latinos habere tractatum brevem et utilem de linguis alienis quo utantur, et quae deberet esse prima pars grammaticae, quia totum studium Latinorum dependet a linguis alienis, et etiam ipsa lingua Latina.—*Ibid.*, p. 90: . . . idioma est proprietas alicujus linguae distincta ab alia; ut Picardicum et Gallicum, et Provinciale, et omnia idiomatica a finibus Apuliae usque ad fines Hispaniae. Nam lingua Latina est in his omnibus una et eadem, secundum substantiam, sed variata secundum idiomatica diversa.—*Compendium Studii Philosophiae*, VI, p. 438: Chaldaeus enim sermo et Hebraeus differunt sicut idiomatica unius linguae; ut Picardicum, et Normandicum, Burgundicum, Parisiense, et Gallicum, una enim lingua est omnium, scilicet Gallica. . . —*Opus Majus*, III, vol. I, p. 66, Bridges.

that the Jews should be compelled to lend books on good security, for the purposes of learned research, till the universities should have obtained books of their own by printing, or by the purchase of MSS.; and he declared that he would like to pay the price for a copy of the Talmud twice over. Bacon complains of the want of books in even stronger terms than Retchlin; but then his needs were greater, on account of his multifarious scientific investigations; besides books he wanted instruments, diagrams, tables, and other scientific appliances on a large scale. He says that the most indispensable books, such as the works of Aristotle and Avicenna, of Seneca and Cicero, could not be obtained without spending a fortune. He had searched for books in every nook and corner with only occasional success. Besides, there were only few people who knew such books, or who knew how to select, out of the infinite mass, that which was really needful. The consequence was that no comprehensive special treatises (*"scripta principalia de sapientia philosophiae"*) could be composed, nor could any defects and errors in the Latin texts be detected. Prelates and princes would have to come to the rescue<sup>1</sup>.

<sup>1</sup> *Opus Tertium*, X, p. 34: . . . oportet habere libros aliarum linguarum plurimos, scilicet de grammatica, et textus singularum partium philosophiae, ut viderentur defectus et falsitates in codicibus Latinorum. Sed hi libri . . . non possunt procurari sine principibus et praelatis.—Ibid., XI, p. 35 sq.: . . . nam sine instrumentis mathematicis nihil potest sciri, et instrumenta haec non sunt facta apud Latinos, et non fierent pro ducentis libris, nec trecentis. Adhuc autem sunt tabulae meliores . . . et hae tabulae valerent thesaurum unius regis. . . Et saepe aggressus sum compositionem istarum tabularum, sed non potui consummare propter defectum expensarum, et stultitiam eorum cum quibus habeo facere. . . Deinde sunt alia instrumenta et tabulae geometricae practicae, et arithmeticae practicae, et musicae, quae sunt utilitatis magnae; et necessario requiruntur.—Ibid., XV, p. 55: Sed libri istius scientiae Aristotelis et Avicennae, Senecae et Tulli, et aliorum, non possunt haberi nisi cum magnis expensis; tum quia principales libri non sunt translati in Latinum, tum quia aliorum non reperitur exemplar in studiis solemnibus, nec alibi; quia libri Marci Tulli *De Republica* optimi nusquam inveniuntur, quod ego possum audire, cum tamen sollicitus fui quaerere

Bacon's prospects of seeing the evil remedied were smaller than those of Reuchlin in another respect also. In Reuchlin's time the art of printing had been invented, and the multiplication of books, once they were obtained or written, was comparatively easy. But in Bacon's age of MSS. the obstacles were almost insurmountable. How much parchment, Bacon says, and how many copyists were required, and how many proof copies had to be prepared before one copy could be produced in a finished form so as to stand the final test! Many assistants were required, the merely mechanical work had to be entrusted to a number of lads, and many readers must be employed to purge the text from errors; inspectors were wanted to prevent the copyists from committing frauds, and to superintend and account for the expenses. He had himself attempted to make provisions in this direction, by means of useful collections and the training of young men to such kind of work, and had spent more than two thousand livres on such preparations, and on experiments and the acquisition of instruments and tables<sup>1</sup>.

per diversas partes mundi, et per diversos mediatores. Similiter sunt multi alii libri ejus. Libros vero Senecae, quorum flores vestrae beatitudini conscripsi, nusquam potui invenire, nisi a tempore mandati vestri, quamvis diligens fui in hac parte jam a viginti annis et pluribus. Et sic est de multis aliis utilissimis libris istius scientiae nobilis. Paucissimi etiam sunt qui sciunt hujusmodi libros, nec sunt exercitati hic, nec scirent ex infinita multitudine colligere quae necessaria sunt, nec collecta ordinare.—*Ibid.*, XVI, p. 56: . . . et recitavi difficultatem habendi istas, tum propter raritatem personarum quae sciunt de his, tum propter raritatem librorum, tum propter expensas varias in personis, in libris, in instrumentis, in tabulis, in operibus sapientiae magnis, in experiētiis secretis. Et ideo patet quod scripta principalia de sapientia philosophiae non possunt fieri ab uno homine nec a pluribus, nisi manus praelatorum et principum juvent sapientiae cum magna virtute.

<sup>1</sup> *Opus Tertium*, XI, p. 36: Nam primo oportet facere instrui pueros decem vel duodecim in canonibus et tabulis astronomiae vulgatis, etc.—*Ibid.*, XVI, p. 57 sqq.: . . . exigenter pergamentum infinitum, et scriptores multi, ut multa fierent exemplaria, antequam unum haberetur ultimum. . . . Oportet manus multiplicari, et scripturas varias consumi,

Bacon was thus under the necessity of creating for himself such opportunities as are deemed the first requisites by all intending students. He had hardly any resources, except such as were of his own making; and this was the case just as much in his scientific researches as in his philological studies.

As to the means by which he sought to master the Greek and Hebrew languages, they were the same as those used by Reuchlin. Both Bacon and Reuchlin were of opinion that there was no better plan than learning Greek from the Greeks and Hebrew from the Jews. Reuchlin, when staying at Basle, grasped the opportunity of learning Greek from Andronicus Contablaças, a born Greek. As envoy to the court of the Emperor Maximilian, he became acquainted with Jacob Jehiel Loans, the Jewish body physician of the emperor, who became his first teacher in Hebrew. At a later period, when at Rome, Reuchlin obtained instruction in Hebrew from Rabbi Obadiah Sforno, who was a classical scholar, a physician, a philosopher, and a Cabbalist. It was in the same way that Bacon obtained a knowledge of Greek and Hebrew, by taking instruction from Greeks and Jews. He declared "that Jews were to be found everywhere, and that their language was

*antequam habeatur exemplar unum limatum et ultima examinatione probatum. Nam tractatus sufficiens debet habere septem conditiones. . . . Et hae septem conditiones non possunt fieri nisi multa fiant exemplaria, et destructio pergamenti ineffabilis. Iterum, cum omnia verificantur et certificantur per figuras et numeros, ut patet ex operibus quae mitto, oportet quod multi sint collaterales et adjuutores, et maxime juvenes qui figurent et numerent; nam seniores taedio afficerentur talibus operibus puerilibus. Atque correctores varios oportet haberi, qui omnia scripta praevia vice corrigant, ad exemplaria ultimata, donec artifices principales perlegerent omnia, ut nihil esset superfluum, nihil diminutum. Et plures oportet haberi qui praeessent fraudibus scriptorum, et qui rationem redderent et facerent expensarum.—Ibid., XVII, p. 59: Nam per viginti annos quibus specialiter laboravi in studio sapientiae, neglecto sensu vulgi, plus quam duo millia librarum ego posui in his, propter libros secretos, et tabulas, et alia; tum ad quaerendum amicitias sapientium, tum propter instruendos adjuutores in linguis, in figuris, in numeris, in tabulis, in instrumentis, et multis aliis.*

substantially the same as Arabic and Chaldaean. There were besides people in Paris, in France (*sic*), and in other countries whose knowledge was sufficient for this purpose. Greek accorded greatly with Latin, and there were many persons in England and France who knew enough of that language. There were many places in Italy where the clergy and the population were purely Greek, and it would be worth while to go there for information. Prelates and wealthy people should send thither for books and teachers, after the example set by Robert de Grosseteste<sup>1</sup>."

We do not know whether Bacon's intercourse with Jews constituted a count in the indictment, on the strength of which, it is said, he was condemned and thrown into prison<sup>2</sup>. We know how much Reuchlin had to suffer for similar conduct; how he was upbraided with not sufficiently hating the Jews. Bacon was certainly guilty of the same offence. In the face of such zeal as he displayed for the conversion of all mankind to the faith of his Church, for the annihilation of all those whose conversion would be impossible, and the early disappearance of the Mahommedan religion, it is noteworthy that not a single expression is found in his writings disparaging to the Jews of his time. It need not be said that he extolled the superiority of Christianity over the religion of the Jews<sup>3</sup>; but, even from his standpoint, he maintained the infinitely higher claims of Judaism over those of any other religion. There is a total absence of

<sup>1</sup> *Compendium Studii Philosophiae*, VI, p. 434 : Doctores autem non desunt; quia ubique sunt Hebraei, et eorum lingua est eadem in substantia cum Arabica et Chaldaea, licet in modo differant. Suntque homines Parisius, et in Francia, et ulterius in omnibus regionibus, qui de his sciunt quantum necesse fuerit in hac parte. Graecum vero maxime concordat cum Latino; et sunt multi in Anglia et Francia qui hic satis instructi sunt. Nec multum esset pro tanta utilitate ire in Italiam, in qua clerus et populus sunt pure Graeci in multis locis; et episcopatus, et archiepiscopatus, et divites ac seniores possent ibi mittere pro libris, et pro uno vel pluribus qui scirent Graecum; sicut dominus Robertus, sanctus episcopus Lincolniensis, solebat facere.

<sup>2</sup> Cf. Mr. Bridges' Introduction to the *Opus Majus*, p. xxxi.

<sup>3</sup> *Opus Majus*, VII, vol. II, p. 366 sqq., Bridges.

*odium theologicum* in his discussion as regards the Jewish religion, and no trace of any bitterness against the Jews. He must have known many of them; he made use of them in his Hebrew studies, and says that they were to be found everywhere, yet not a single insulting epithet escapes him. He goes even so far as to deprecate any attempt to convert them. Theoretically, he believes, of course, in their ultimate conversion to Christianity, but he was quite content to relegate such consummation till after the conversion of all the rest of mankind, quoting the New Testament in support of this view. But he considered that time to be still distant. "There were many nations still steeped in paganism, and there were pagans whose territories were not so remote from Paris, as Paris was from Rome, and they inhabited countries larger than Germany, France, and Spain<sup>1</sup>." More than that, he has even a good word to say for the Jews who lived at the time of the birth of Christianity, and who used to be held up by Christians of all shades of opinion as the worst criminals on earth, whose actions were relentlessly visited, and are being visited still, upon their descendants. He says that "there were at the time of the crucifixion many holy and good men among the Jews; and, nevertheless, they all rejected the Lord, except his mother, and John, and the Marys; nay, it is even said that nobody really believed in him except his mother<sup>2</sup>." This judgment about the Jews at

<sup>1</sup> *Compendium Studii Philosophiae*, I, p. 402 sq. : . . . aut praeveniet unus beatissimus papa, qui omnes corruptiones tollet de studio, et ecclesia, et caeteris, et renovetur mundus, et intret plenitudo gentium, et reliquiae Israel ad fidem convertantur. Quoniam Apostolus constituit Judaeis convertendi terminum in conversione plenitudinis gentium, dicens ad Romanos xi [25]: "Cum intraverit plenitudo gentium, tum reliquiae Israel salvificent," . . . nondum tamen adimpletum est. . . . Sicut nos scimus, non solum a longe sed prope nos, regiones maris esse quae in puro paganismo adhuc remanent, quibus nunquam fuit praedicatum, nec legem Dei receperunt. . . . Et non distat principium terrarum illarum a Parisius, nisi quantum Roma; et sunt majora regna quam Allemanniae et Franciae et Hispaniae. . . .

<sup>2</sup> *Opus Tertium*, IX, p. 28: Certe multi fuerunt sancti et boni inter

the time of the crucifixion, as uttered by the mouth of a Christian theologian, is unique ; and we should have no reason to be surprised if such sentiments of tolerance towards the Jews had weighed heavily in the scales of those who, we are told, brought about his condemnation.

Bacon understood perfectly well that neither every Jew nor every Greek, although acquainted with his own language, was, therefore, competent to impart scientific instruction.

We see, he says, many laymen who speak Latin very well, and yet have no notion of the grammatical rules of that language ; the same is the case with almost all the Jews and real Greeks, let alone the Latins who knew Greek and Hebrew. Only very few of the former class are able to teach grammar efficiently and in a methodical and rational manner, as we Latins are able to do by means of Priscian's books. We must, therefore, look out for men who have a scholarly knowledge of those languages, but this would entail great expense<sup>1</sup>.

Bacon was reasonable enough not to expect that every student would acquire the same knowledge of languages. He carefully marks out the limits to be reached, and classifies the proficiency attainable under three heads.

I do not mean to say that every one should completely master the learned languages, Greek, Hebrew, Arabic, and Chaldaean, and know them as he knows his mother tongue ; as we speak English, French,

Judaeos quando transfixus est Dominus, et tamen omnes dimiserunt eum, praeter matrem suam, et beatum Johannem, et Marias ; et dicitur adhuc quod sola mater Dei fidem rectam habuit.—Should the contents of the Toulouse MS. be brought home to Bacon, his intercourse with Jews would prove to have been still more intimate, for, in that case, he would, like Reuchlin, have corresponded with Jews in the Hebrew language. Vid. S. Berger, l. c., p. 39.

<sup>1</sup> *Opus Tertium*, X, p. 34: Vidimus enim multos laicos, qui optime loquebantur Latinum, et tamen nihil sciverunt de regulis grammaticae ; et sic est modo de omnibus Hebraeis fere, et similiter de Graecis veris, non solum de Latinis qui sciunt Graecum et Hebraeum . . . ita quod paucissimi eorum sciunt docere grammaticam veraciter, cum causis et rationibus reddendis, sicut nos Latini scimus per libros Prisciani. . . . Oportet igitur primo habere homines peritos in linguis alienis, et hi haberi non possunt sine magnis expensis.



and Latin. I do not even demand the student to be proficient enough to be able to translate scientific books from such languages into his (Latin) mother tongue. It is better to be satisfied with a third degree of knowledge, which could be easily acquired under a proper teacher. It is enough for us to master so much Greek and Hebrew as to read and to know the accident, according to the theory of Donatus. Once this is learned and a proper method followed, the construing and understanding of the words become easy<sup>1</sup>.

Bacon considers it advisable not to attempt more; because people, when aspiring to the first and the second degree of linguistic knowledge, will despair, and never reach even the third degree. "If a person were to apply himself diligently from his youth for thirty years, he might attain all three degrees, or, at least, the two last degrees; for it is the first degree which offers all the difficulty, as we, who tried it, know by experience<sup>2</sup>."

This statement of Bacon's, that thirty years' close application to the study of languages was required to master them, curiously contrasts with his notions as to the time necessary to obtain the lowest degree of proficiency. There

<sup>1</sup> *Compendium Studii Philosophiae*, VI, p. 433 sq.: Prima igitur est scientia linguarum sapientialium a quibus tota Latinorum sapientia translata est; cujusmodi sunt Graecum, Hebraeum, Arabicum, et Chaldaicum. Non tamen intelligo ut quilibet sciat has linguas sicut maternam in qua natus est, ut nos loquimur Anglicum, Gallicum, et Latinum; nec ut sciamus tantum de his linguis ut quilibet fiat interpret, et transferre possit in linguam maternam Latinam scientiam de linguis illis. Sed tertius gradus hic eligendus est, qui facillimus est habenti doctorem, scilicet ut sciamus de his quantum sufficit ad intelligendum quae requirit Latinitas in hac parte. Et vis hujus rei stat in hoc; ut homo sciat legere Graecum, et Hebraeum, et caetera. Et ut secundum formam Donati sciat accidentia partium orationis. Nam his notis, constructio et intellectus vocabulorum linguarum illarum, quantum Latinis sufficit, de facili habentur per modos quos inferius assignabo.

<sup>2</sup> *Compendium Studii Philosophiae*, VI, p. 434: Stulti enim homines et imperiti quum audiunt loqui de scientia linguarum, aestimant se obligari primo gradui et secundo, et ideo desperant et contemnunt tertium gradum facillimum; quamvis si considerarent et diligentes essent a juventute, etiam post triginta annos possent pertingere ad omnes gradus dictos, et saltem ad secundum cum tertio. Nam tota difficultas consistit in primo gradu; ut nos qui talibus insistimus experimur.

is certainly a great difference between thirty years and three days ; and yet the latter is all that Bacon demands for the acquisition of the lowest degree. He says that, although he had himself devoted forty years to study, he was, nevertheless, certain to be able to impart the results of his investigations to a studious and earnest person in less than six months, provided he had first composed a compendium. He could teach such a student, within three days, enough Hebrew to enable him to read and understand all that had been written by the saints and ancient sages, in elucidation, correction, and exposition of the sacred text. But the student would have to follow the prescribed method. In another three days he would know as much Greek ; so that he would be able to read and understand everything pertaining to theology, philosophy, and the Latin language<sup>1</sup>. The possibility of teaching Hebrew in three days is, at first sight, altogether unlike Bacon's other estimate, and differs also greatly from that of Reuchlin, who declared that the student

<sup>1</sup> *Opus Tertium*, XX, p. 65 : Multum laboravi in scientiis et linguis, et posui jam quadraginta annos postquam didici primo alphabetum ; et praeter duos annos de istis quadraginta fui semper in studio, et habui expensas multas, sicut alii communiter ; et tamen certus sum quod infra quartam anni, aut dimidium anni, ego docerem ore meo hominem sollicitum et confidentem, quicquid scio de potestate scientiarum et linguarum, dummodo composuissem primo quiddam scriptum sub compendio. . . . Sed certum est mihi quod infra tres dies ego quemcunque diligentem et confidentem docerem Hebraeum, ut sciret legere et intelligere quicquid sancti dicunt, et sapientes antiqui, in expositione sacri textus, et quicquid pertinet ad illius correctionem et expositionem, si vellet exercitare secundum doctrinam datam. Et per tres dies sciret de Graeco iterum ; et non solum sciret legere et intelligere quicquid pertinet ad theologiam, sed ad philosophiam et ad linguam Latinam. Nam consideret vestra sapientia quod in linguarum cognitione sunt tria ; scilicet ut homo sciat legere et intelligere ea, quae Latini tractant in expositione theologiae et philosophiae et linguae Latinae. Et hoc est facile. . . . Sed aliud est in linguarum cognitione, scilicet ut homo sit ita peritus ut quod sciat transferre. . . . Tertium vero est difficilius utroque, scilicet quod homo loquatur linguam alienam sicut suam ; et doceat, et praedicet, et peroret quaecunque sicut in lingua materna. De istis igitur duobus non loquor modo, sed de primo. . . .

commenced to master Hebrew only at the moment when he reached the stage of despair, and was on the point of throwing up that study as an impossible task. But the two notions can be easily reconciled; and Bacon's view, that thirty years were required, is perhaps more pessimistic than that of Reuchlin. He defines clearly how much, or, rather, how little knowledge three days' application could supply. It is the sort of Hebrew knowledge that was probably possessed by Bede and Alcuin; just enough to rescue the student from stumbling when, in the commentaries of the Bible, especially those of Jerome, he came across some exposition based on a derivation from the Hebrew.

In reference to the extent of Bacon's actual knowledge of Hebrew, we must consider two classes of evidence: firstly, his declaration of his own proficiency; and, secondly, those passages in his works in which he alludes to matters connected with Hebrew. If we were only to consult the evidence derived from the latter source, as presented now in his printed works, we might feel inclined to form a very low estimate indeed of the amount of his Hebrew learning. Bacon's quotations in reference to Hebrew are hardly any of them original; they are for the most part explanations of passages taken from Jerome and others. On the other hand, we cannot by any means be sure that the MSS. have preserved everything that Bacon may have said on the subject. The transcribers did not greatly relish copying Hebrew or even Greek. They simply omitted, as a rule, the passages which they were unable to understand, and which did not interest the people by whom they were employed, who were mostly as ignorant of Hebrew as themselves. Thus the important passage in the third book of the *Opus Majus*, containing the Hebrew and Greek alphabets, with interlineary transliteration and explanatory remarks, is, as far as known, extant only in two MSS.<sup>1</sup>; the

<sup>1</sup> In the Cottonian MS. in the British Museum (Julius D.V.), and in another MS. in the Vatican, of which the learned editor of the latest

others simply omit it. But why speak of transcribers when even Jebb, in his edition of the *Opus Majus*, omitted the whole passage, although he had the very MS. before him from which it was first edited by Mr. Bridges—and that incompletely. Many other passages, of the greatest value for gauging Bacon's extent of knowledge of Hebrew, may thus have become lost; and nobody can say with certainty that he never wrote the Hebrew Grammar mentioned among the works attributed to him<sup>1</sup>.

But the little we do possess bears ample testimony that Bacon had sufficient knowledge of Hebrew to satisfy his own demands of a third-rate, and even of a second-rate, Hebrew scholar. He clearly understands what he is about, when explaining derivations of words from the Hebrew, or exposing blunders made by other scholars, and he speaks with undoubted authority and knowledge of the subject. He has added nothing to the stock of information; there is not a single observation of his which can be called original; but there is enough to show that Dr. Steinschneider's observation about the absence of evidence in Bacon's works of any direct knowledge of Hebrew is unfounded<sup>2</sup>.

edition of the *Opus Majus*, Mr. John Henry Bridges, possesses an excellent photographic copy. Mr. Bridges kindly allowed me to collate from that copy, which contains a portion of the *Opus Majus*, the passages in question. Mr. Bridges did not have that MS. before him, when editing the *Opus Majus*, and he intends to re-edit this portion, many passages of which are much more correctly given in the Vatican MS., than in any other.

<sup>1</sup> Pitseus. Bale.

<sup>2</sup> M. Steinschneider, in H. Brody's *Zeitschrift für Hebräische Bibliographie*, I, p. 53. Steinschneider cites an article by Dr. J. Guttman in the *Monatsschrift für die Geschichte und Wissenschaft des Judenthums*, Breslau, 1896, p. 323. Guttman confined himself to the consideration of the passages in Bacon's works relating to the Jewish Calendar, for which the latter had an unbounded admiration. The table which he composed, *Hebraicis literis*, and inserted in the *Opus Majus* (vid. *Opus Tertium*, pp. 215, 220; cf. *O. M.*, vol. I, p. 208, note, Bridges), has, it seems, not been preserved. The *Liber Febrium*, by Isaac Israeli, quoted in the *Opus Majus* (vol. I, p. 246, Bridges), and Gabirol's *Fons Vitae*, quoted by Bacon without the author's name (Charles, p. 324), were neither of them originally written in Hebrew, and were known to Bacon from Latin translations.

On the contrary, his observations show him to have been a tolerable Hebrew scholar.

To give a few instances. It is only in consequence of his intimate acquaintance with the Hebrew text of the Bible that Bacon was saved from falling into the error, committed by "all theologians," as to the meaning of an observation of Jerome's. "All theologians" were under the impression that the Lamentations of Jeremiah were written in the Chaldaean language. The cause of the error was Jerome's remark that one *pericope* of Jeremiah was written in Chaldaean. The word *pericope* bears the meaning of a *small part*, and the Lamentations being the smaller of Jeremiah's works, they thought that this was alluded to by Jerome. But Bacon, from his acquaintance with the text of the Hebrew Bible, was able to explain that Jerome's remark applied to one verse only (Jer. x. 11). Bacon gives the verse in full in the original Chaldaean, adds a Hebrew translation, and supplies both with interlineary transliteration and Latin translation<sup>1</sup>.

<sup>1</sup> *Compendium Studii Philosophiae*, VI, p. 438: Pono exemplum de prologo Daniel, in quo beatus Hieronymus dicit quod una pericope Hieremiae scribitur sermone Chaldaico, sed tamen Hebraicis literis exaratur; quod omnes theologi intelligunt esse librum Threnorum, et ita exponunt prologum illum, decepti vilissima et ficta auctoritate Britonis, cujus expositione omnes in prologis Bibliae abutuntur. Auctoritate igitur nulla docti dicunt *pericope* Graece est parva particula Latine, et libellus Threnorum parvus est respectu majoris voluminis Hieremiae. Sed hic error intolerabilis est. Nam libellus Threnorum, ut omnes Hebraei sciunt, sicut scribitur literis Hebraeis, sic sermo Hebraeus est. . . . Deinde testantibus omnibus Hebraeis Latinis inveniemus illam particulam in decimo capitulo libri magni Hieremiae, ubi dicitur in Latino: "Sic igitur dicetis eis, Dii qui coelum et terram non fecerunt, pereant de terra et his quae sub coelo sunt." Haec parva particula est illa de qua Hieronymus dicit, ut omnes Hebraei sciunt; quia proculdubio literis Hebraicis scribitur. Sed sermo est Chaldaeus.—Similarly in the *Opus Majus*, Pars III. Both the Cottonian and the Vatican MSS., after the description of the Hebrew alphabet, proceed thus: Et sic invenitur hic in hoc Hebraeo quod sequitur: Chidenah כרנה etc.—the whole verse, with transliteration and translation, and the note, "Litera Hebraica Sermo Chaldaeus." This is followed by the Hebrew translation (with transliteration, Latin translation, and

Bacon gives the Hebrew alphabet, with the names of the letters and their equivalent sounds. He describes the ordinary and final letters, with terms answering to the expressions פתוחה, סתומה, and פשוטה<sup>1</sup>. There is only the ש, but the subsequent passages show that Bacon was fully aware of the difference between Shin and Sin. He calls the letters *aleph, ain, he, heth, iot, vaf*, vowels, and describes their sounds, quoting Jerome for his authority. In describing the vowel-points he renders the kametz as *linea cum puncto* —, and thus we find it in all old MSS. Of the semi-vowels he only mentions the ׁ, omitting the ׂ — which, however, occurs subsequently—and the ׃. He briefly mentions the signs for *dagesh* and *rapheh*, and observes that ף sounds like z “ut cum dico *adamas*,” and ץ “ut cum dico *dabo*,” but he does not explain the difference of pronunciation of the other letters of ברכפת, when written with or without the *dagesh lene*, although he seems to allude elsewhere to the difference of pronunciation between כ and כ׳<sup>2</sup>.

Mr. Bridges points out<sup>3</sup> that Bacon's scheme of transliteration and pronunciation of the Greek was altogether in accordance with modern Greek, and that the cause of this must be found in the fact that he not improbably

the note “*Litera Hebraica Sermo Hebraeus*”), thus: זה האמרו להם אלהים (sic) אשר שמם וארץ לא עשו יאברו מארץ ומחתח שמם אלה. In the Cottonian MS. the words are in irregular order, the Vatican MS. reproduces them correctly. The passage is omitted in Mr. Bridges' edition. Cf. S. Berger, l. c., p. 39.

<sup>1</sup> In the Cottonian MS. of the *Opus Majus*, the Norman-French terms “uverte” and “close” (סתומה and פתוחה) are used in the case of כ and כ׳; the ן and ף are described as “nun draite” (dreite), “sazike draite” (פשוטה); the נ and ז are marked with a hardly legible word, which I think is “curvatum” (כפופה), the כ and ך, ס and ף are without any distinguishing mark. In the Vatican MS. the כ, ס, ף, and ן are described as “uverte,” “clase” (sic), and “dreite.” All this will be more fully explained in my notes to a fragment by Bacon on Hebrew grammar, to be published shortly. Vid. infra, p. 87, n. 1.

<sup>2</sup> *Opus Minus*, p. 351 : . . . et c nostrum valet caph eorum, nisi quod debet asperari c nostrum, sicut *Sesach*.

<sup>3</sup> Introduction, p. l.

learned the language from one of the Greeks who had been invited into England by Grosseteste. This opens up some interesting questions, not only in reference to the pronunciation of Greek, but also to that of Hebrew, and to the mode in which Latin was pronounced in those days by English scholars.

It is remarkable that the cases of Roger Bacon and of Reuchlin are parallel on all three points. It is evident that Bacon, in teaching Greek, made use of that style of pronunciation which has since received the name of *Itacism*, and which is commonly called the Reuchlinian pronunciation. But if Bacon's seeds had fallen on more fruitful ground, it would have been known as the Baconian mode of pronouncing Greek, in distinction from the *Etacism*, introduced by Erasmus. Again, in regard to the pronunciation of Hebrew, Reuchlin introduced the one which he had learned from Italian Jews, and which mostly corresponds with the one in use among the Sephardic Jews, as distinct from the style in vogue among the Ashkenazim. The former has since become the mode in which Hebrew is pronounced at the European universities. It is not here the place to dwell on the origin of that difference of pronunciation, and to compare it with the way in which Arabic, Aramaic, and other dialects belonging to the Semitic stock were formerly spoken. But one thing is certain; if Bacon had, like Reuchlin, succeeded in interesting his contemporaries in the study of Hebrew, the Christian scholars in Europe would have been led into the same direction by Bacon as they were led, at a later period, by Reuchlin; for Bacon says that both the *pathach* and the *kametz* were to be pronounced as *a*, and the *cholem* as *o*. He transliterates פ, צ, ק, ג, and ח, into *ba*, *be*, *bi*, *bo*, *bu*, &c. Once only the letters ט and ב are given, in the Cottonian MS., as *heis* and *teis*, in all other cases they are described as *cheth* and *teth*, and we always find *bet* and *tav*. It is greatly to be regretted that the Hebrew grammar, which Bacon is said to have written, is not now extant—if it ever existed;

but by comparing the various passages bearing on this subject in Bacon's printed works, it becomes evident that his knowledge of these matters was derived, partly from instruction received from Jews, and partly from Jerome's commentaries. It appears that the Jews consulted by him must have used the so-called Sephardic pronunciation. An investigation into the mode of pronouncing Hebrew by the Jews of England before the expulsion might be worth the trouble.

Bacon's pronunciation of Latin was evidently the one common on the Continent. If the English scholars of those days, when reading or speaking Latin, gave the vowels the sounds they have in modern English, it is clear that Bacon did not follow their example. His transliterations of Greek and Hebrew show that he gave the vowels the value they had, and still have, on the Continent. He says that the letter *iot* (ι), when it is a vowel only, sounded "*sicut i nostrum*." He transcribes the *pathach* and the *kametz* by the letter *a*, the *segol*, *tsere*, and even the *shva* and *chatuph segol* by the letter *e*, and observes that the vowels have the sounds "*quinque vocalium 'nostrarum' a, e, i, o, u,*" implying the sounds these letters have abroad. It is possible that all English scholars spoke their Latin in the same way.

If, however, Latin vowels were sounded in England as those of the vernacular, it is clear that Bacon discarded the local pronunciation and adopted the foreign one; in the same way as Reuchlin exchanged the local German mispronunciation for the more correct Italian. For, when Reuchlin was still quite a young man, it happened that papal nuncios arrived at the court of the Margrave Frederic, and when they came to take their leave and to receive their dispatches they were addressed by the high chancellor, a native of Hechingen, who spoke Latin after the abominable pronunciation of his district. He began his oration, but the Italians could not understand a word, and refused to receive this as a dispatch. In this embarrassment some one remembered that Reuchlin, who was then the chan-



cellor's amanuensis, could speak pure Latin. He was called, and carried on the conversation in the style he had learned during his travels. Thus the cases of Bacon and Reuchlin seem to be parallel in this instance also.

Bacon's references to Hebrew, although showing no originality, yet prove that he spoke with a full knowledge of the subject; and his acquaintance with the Hebrew text of the Bible becomes apparent in his illustrations of comments made by older scholars. A curious instance is the way he exposes a blunder of Pope Gregory the Great, already alluded to. Pope Gregory, in his commentary on the Book of Job, is rather puzzled by the name given by Job to one of his three daughters, born after the latter's restoration to health and wealth. He quotes Job xlii. 14 thus: "And he called the name of one, Dies; and the name of the second, Casia; and the name of the third, Cornustibii." These are meant to be the renderings of the Hebrew names Jemima, Keziah, and Keren-Happuch (קַרְעִיָּה, יְמִימָה, and קֶרֶן הַפִּיֹּךְ). Gregory considered Cornustibii (=Cornus tibii) to be the compound of two words denoting certain musical instruments, something like "trumpet-fife," and observes that "the translator appropriately took care not to insert them as they are found in the Arabic language, but to show their meaning more plainly when translated in the Latin tongue. For who can be ignorant that Dies and Casia are Latin words? But in Cornustibii (though it is not *cornus* but *cornu*, and the pipe of the singers is called not *tibium* but *tibia*) I suppose he preferred, without keeping the gender of the word in the Latin tongue, to state the thing as it is, and to preserve the peculiarity of that language from which he was translating. Or because he compounded one word out of the two (*cornu* and *tibia*), he was at liberty to call both words, which are translated into Latin by one part of speech, whatever gender he likes."

Bacon<sup>1</sup> alludes to this passage, and says that it was

<sup>1</sup> *Compendium Studii Philosophiae*, VI, p. 440: Cum igitur beatus Gregorius in fine Job, loquens de tertia filia ejus, exposuerit "Cornus tibii," licet

clear to any one, able to compare the original Hebrew, that the text used by the Pope was corrupt; that the second part of the compound word was not *tibii* but *stibii*; and that the name of Job's daughter was Cornu Stibii, meaning a horn or receptacle of stibium, and not the monstrosity Cornustibii (trumpet-fife). Bacon correctly traces the etymology of the name from the Hebrew, and adds that the term used here for stibium (סִבְיָה) was the same as 2 Kings ix. 30, where we are told that Jezebel dyed her eyes with stibium. If Brito, or William the Fleming, or Michael Scot had been guilty of an error of the kind, how mercilessly would Bacon have taken him to task. But he had much too great a reverence for the Pope not to try and palliate the fault. He held Pope Gregory in great veneration, and fully believed that the latter's works, which were, after their author's death, in danger of being burned, were saved "by a beautiful miracle of God<sup>1</sup>." He therefore says that the holy man's time was fully occupied, and he did not have the leisure to collate many copies of the Bible, and to see what the Greek and Hebrew texts offered. But Bacon is very indignant with the crowd of modern theologians, who disputed about things they did not understand, and persisted in defending Gregory's rendering.

Dr. Steinschneider's remark<sup>2</sup>, that Bede's *expositio nominum* videatur ei quod *cornus* non fuisset Latinum nec *tibium* similiter, sed sic inveniens in exemplari suo, non ausus fuit immutare, propter textus sacri reverentiam et propter ejus summam humilitatem; cum illi qui modo solliciti sunt de veritate textus Dei, et qui sciunt Graecum et Hebraeum, possunt docere sine contradictione, quod exemplar beati Gregorii fuit corruptum, aut vitiose . . . ut dicatur *cornus tibii*, cum tamen deberet dici *cornu stibii*. . . Et sanctus homo forsitan multis occupatus non habuit tempus examinandi plura exemplaria, nec quid in Graeco vel Hebraico scriberentur. Nam in Hebraeo est *cornu stibii*, id est cornu plenum stibio, secundum glossam Hebraicam; sicut vas aquae dicimus, id est, plenum aqua. Nam idem vocabulum ponitur hic pro stibio, et quarto Regum, nono capitulo, ubi dicitur quod Jezabel depinxit oculos suos stibio. . . Sed tamen vulgus modernorum theologorum disputans de his, quae ignorat, nititur salvare expositionem beati Gregorii, et dum Scyllam vitare nititur incidit in Charybdim.

<sup>1</sup> *Opus Majus*, I, vol. I, p. 19, Bridges.

<sup>2</sup> Vid. supra, p. 37, n. 1.

*num* proved, as little as any other explanatory index of Biblical names, a direct knowledge of the Bible, does not apply to Bacon ; for the latter is never content with merely repeating what previous writers had said, but whenever quoting them adds an explanation of his own, which shows that he was fully able to account for his opinions. Thus, for instance, when mentioning Jerome's etymology of the name of Israel as denoting "Master with God" ("princeps cum Deo"), and not as others before Jerome had explained it, "a man who saw God" ("vir videns Deum"), Bacon fully enters into the grounds which prove the latter derivation to be untenable. He explains that the circumstance that in Hebrew *Is* meant *man*, *Ra* = *seeing*, *El* = *God*, led those commentators to believe that the patriarch's name was a compound of these three words. But Jerome rightly objected to this derivation. For the name contained the five letters Iod, Sin, Resh, Aleph, Lamet, which made up the name ישראל, Israel. But the other compound would consist of eight letters, namely, Aleph, Iod, Sin, Resh, Aleph, He, Aleph, Lamet, making the word אישראל. Besides, he argues, these letters would make Iserael a word of four syllables, whereas the name has really only three, because a dot under a letter denoted the vowel *i*, two dots (tsere) *e*, and a stroke with a dot underneath *a* ; but the strongest argument must be taken from the sense, which was explained in the verse itself. Bacon illustrates this further by reproducing the whole verse in Hebrew<sup>1</sup>. These argu-

<sup>1</sup> *Opus Majus*, l. c., p. 82 : Nam apud Hebraeos *Is* est *vir*, *Ra* videns, *El* Deus ; et ideo crediderunt multi quod hoc nomen patriarchae habet resolutionem in illa tria. Sed Hieronymus reprobat per multa argumenta . . . in nomine patriarchae sunt hae quinque literae per ordinem : Iod, Sin, Resh, Aleph, Lamet, sicut ipsum Hebraeum hic positum declarat ישראל, Israel. Sed in hoc triplici vocabulo hae octo literae habent hunc ordinem, scilicet, Aleph, Iod, Sin, Resh, Aleph, He, Aleph, Lamet, ut hic Hebraeum ostendit אישראל. Et quarto argui potest explicatione. Nam sicut puncta ostendunt nomen proprium non retinet apud Hebraeum sonum praecisum illorum vocabulorum. Nam secundum majorem quasi Iserael sonatur in quatuor syllabis, tamen ibi vocabulorum sonus in solis

ments are set forth in the *Opus Majus*, and repeated in the *Compendium Studii Philosophiae*<sup>1</sup>, where Bacon modestly adds that a fuller explanation of this difficulty would carry him too far, and that, for the present, he was neither obliged nor competent to enter into all the niceties of Hebrew grammar connected with the question. I suppose he refers to the differences between *shva quiescens* and *shva mobile*, between ם and ן, &c.; but this very modesty shows all the more that he was not a mere transcriber of Jerome's remarks, and that his knowledge of Hebrew was quite sufficient to enable him to distinguish between the right and the wrong derivation.

Another instance of Bacon's competency is the way in which he explains the derivation of the name of Sisach = Babel, as given by Jerome, who himself followed the Rabbis. Bacon's words prove that he fully understood the transposition of the letters of the Hebrew alphabet after the scheme דק, נר, בש, אה, &c.<sup>2</sup>

It is unnecessary to give an exhaustive list of all the instances in Bacon's works in which his knowledge of

tribus syllabis coaretatur, quoniam punctum sub litera sonat i, et duo puncta sonant e, et linea cum puncto sub ea sonat a. Sed argumenta fortiora trahuntur ex sensu vocis secundum Hieronymum. Et hoc ostendit ipsum Hebraeum hic scriptum hoc modo: ויאמר לא יעקב יאמר שר שםך כי אם ישראל כי שרית עם אלהים ועם אנשים וחובל. In the Cottonian MS. the words of this verse also are jumbled up in a curious manner.

<sup>1</sup> *Compendium Studii Philosophiae*, VI, p. 436: Sed propter brevitatem transeo; quia expositio plena hujus difficultatis requirit magnam notitiam Hebraeae grammaticae, quantum ad praesens non debeo nec valeo explicare.

<sup>2</sup> *Opus Minus*, p. 350: Similiter cum Jeremias prophetavit contra Babel, non ausus fuit ponere hoc verbum, ne suscitaret furorem Chaldaeorum contra ipsum et populum Dei sed posuit *Sesach* pro Babel. Cujus nominis ratio nullo modo potest sciri, nisi homo sciat Alphabetum Hebraeum. . . . Nam cum Babel scribatur per duo *Beth*, et unum *Lamet* punctuatur more Hebraeo (?) posuit propheta duo *Sin* pro duobus *Beth*, ut Chaldaei nomen ignorarent. Cum tamen omnis habere, videre, et dividere possit nominis rationem, quia more eorum est instruendo parvos, quod faciunt eos conjungere primam cum ultima, et secundum cum penultima; et sic ulterius usque ad duas medias simul positas, scilicet *Caph* secundum

Hebrew transpires. The seventh chapter of the *Compendium Studii Philosophiae* contains a list of words and names which used to be considered as being of Latin origin, but which are in reality derivations from the Hebrew. In some cases Bacon is at great pains to expose the absurdity of such views; as, for instance, in regard to the words *arrabon* and *Gehenna*, which Hugutius and Brito and "other idiotical grammarmongers" ("et aliae grammaticellae idiotae") explain as *arra bona*, and the Greek *ge* and *ennos*. In all these cases Bacon shows no originality, but he displays a complete knowledge of the subject. By far the greater part of his remarks refers to misunderstood explanations by other commentators, especially Jerome. Bacon's intimate acquaintance with the Hebrew text of the Bible is particularly conspicuous in a passage in the fourth book of the *Opus Majus*, in which he rectifies the innumerable errors of the Paris text, especially in the matter of figures, e.g. that Arpachsad lived after the birth of Shelah 303 years instead of 403 years, or that Reu lived 35 years instead of 32, &c. The whole passage supplies, as Mr. Bridges justly observes, further illustrations of the corruption of the Paris text, and at the same time of the care with which Bacon had collated the Septuagint and the Hebrew text <sup>1</sup>.

Yet it seems that Bacon himself fell occasionally, however rarely, into errors of the same description. Thus he says<sup>2</sup> that *Abel*, although a man's name, was, besides, the name of a city (Judges vii. 22), and also denoted "a stone"

et *Lamet*. Et in his sic congeminitis utuntur una pro alia maxime, quum volunt aliquod secretum occultare. Et ideo cum *Sin* et *Beth* sint congeminata, ponit duo *Sin* pro duobus *Beth*, et eadem ratione pro *Lamet* posuit *Caph* secundum; et *S* nostrum valet eorum *Sin* in proposito; et *C* nostrum valet *Caph* eorum; nisi quod debet asperari *C* nostrum, sicut *Sesach*.

<sup>1</sup> *Opus Majus*, IV, vol. I, p. 221, Bridges.

<sup>2</sup> *Compendium Studii Philosophiae*, VII, p. 445: *Abel* est nomen hominis ut scitur, tamen alibi sumitur pro nomine civitatis; Jud. VII, et pro lapide Reg. Sexto capitulo.

(1 Kings vi. 18). He overlooks the fact that in the first case the word is spelt with a He, in the second it is written with an Aleph, and is part of a compound word (אַבֶּל מַחֲוִילָה), and in the third passage the word is not *Abel* at all, but *Aben* (אַבֶּן)<sup>1</sup>.

It is strange that Bacon makes no mention whatever of the Hebrew accents, or the "tonic accents," as they are called. He treats fully on all subjects referring to accentuation, aspiration, punctuation, and prosody. He says that "the Hebrew text contains many kinds of metre, and complains that the Latin translators did not possess that musical power which was owned by the patriarchs and prophets. He says that the only way in which theologians could obtain a knowledge of Hebrew metres and rhythms was to recur to the Hebrew original<sup>2</sup>. And yet there is no evidence that Bacon was acquainted with the Hebrew accents. This is particularly astonishing considering that he was instructed in Hebrew by Jews, and that he had a thorough knowledge of the text of the Hebrew Bible. If Bacon had known the Hebrew accents and their values, we may be sure he would not have failed to mention them, in the same way as he enters fully into the subject of accents, metres, and rhythms of the Greek language. On

<sup>1</sup> The passage, *ibid.*, "Hieremias, Hierico, Hierusalem, Hieronymus et hujusmodi debent aspirari in principio," might lead us to suspect Bacon of having committed an error, such as he always relentlessly censures in others; for how comes the name of Hieronymus to be included in a list of names derived from the Hebrew? The sentence is, however, merely an abbreviated reproduction of the parallel passage in *Opus Tertium*, LXI, p. 247, and is hardly in its proper place here.

<sup>2</sup> *Opus Majus*, IV, vol. I, p. 237, Bridges: Item multa genera metrorum continentur in textu sacro Hebraico.—*Opus Tertium*, LXIV, p. 267: Sed translatore Latini non habuerunt illam musicae potestatem, quam patriarchae et prophetae, qui omnes scientias adinvenerunt. Et ideo non remanserunt haec in textu Latinorum . . . ideo oportet theologum recurrere ad sapientiam Dei in Hebraeo, ut sciat ex ipso fonte haurire aquas sapientiae. Et cum ibi tradita est per vias musicae, metricae, et rhythmicae, necesse est quod perfectus theologus sciat rationem istarum partium musicae.

the other hand, we must not lose sight of the fact that such matters, if referring to Hebrew, might have been suppressed by the copyists. The subject of the accentuation of Greek is treated in his Greek grammar, as yet unpublished<sup>1</sup>, but which is being edited now by the Reverend Father Nolan of Trinity College, Cambridge, and will appear shortly, and the Hebrew accents may have been described in the mysterious Hebrew grammar of his, which I feel inclined to believe that he really wrote, although no trace of evidence of the fact can be found in any of his printed works. If Bacon had succeeded in composing his "*Scriptum Principale*," more light would probably have been thrown on this question; for in the first volume he meant to deal with grammar and logic, and we know what a considerable factor Hebrew was to Bacon in his grammatical researches.

I am of opinion that the direct evidences of Bacon's knowledge of Hebrew contained in his works do less than justice to him. His own testimony as to his proficiency in that language cannot be lightly set aside. He describes himself as a zealous student of Hebrew, who had studied the subject for a number of years. He declares<sup>2</sup> "that although he referred elsewhere to the Arabic language, yet he did not write it like Hebrew, Greek, and Latin." Bacon was not an idle boaster, and full credence is due to assertions of that kind. But his researches in the field of Hebrew lore, like many of his discoveries in other branches of learning, died with him<sup>3</sup>. His admonitions as to the

<sup>1</sup> In connexion with this Greek grammar, two small fragments by Bacon found in the University library at Cambridge, will be published; one, on Greek grammar, edited by the Rev. Father Nolan, and the other, on Hebrew grammar, edited by me.

<sup>2</sup> *Opus Tertium*, XXV, p. 88: De Arabico tango locis suis; sed nihil scribo Arabice, sicut Hebraee, Graece, et Latine.

<sup>3</sup> He may have had a very apt pupil in the Englishman, Willermus de Mara. Vid. Berger, l.c., p. 32 sq. Vid. *ibid.*, p. 49 sq., about a translation of the Bible from the original Hebrew, MSS. of portions of which are extant in Oxford and Cambridge, and which it would be premature to discuss here.

necessity and usefulness of pursuing this discipline remained unheeded, and two more centuries had to pass by before Johann Reuchlin succeeded in disclosing to European scholars the existence of a Hebrew and Rabbinical literature.

S. A. HIRSCH.